CLASS OBJECTIVES

To become familiar with the Tandem and SII Utilities available to system managers to the extent that the following objectives can be accomplished.

1. Understand System 55 software operation, including how non-stop processes and system overseers manage the logical typesetting systems.

2. Understand the concept of system security - Learn how to secure the system files and users, and how to monitor online security and priorities.

3. Learn how other systems are linked together to form a network and the security considerations necessary.

4. Become familiar with using the Tandem and SII manuals (and other class handouts) as resources for reference.

5. Learn how to interpret and direct console messages to monitor and control system operation.

6. Understand how the relational database is structured.

7. Learn how to utilize the job stream.

8. Learn how to create and modify files containing system commands.

9. Learn how to schedule programs for automatic execution.

10. Learn procedures to control output to printers, terminals, and phototypesetters.

11. Learn when to consolidate free space on disc.

12. Learn how to start the system from a complete powered-off state.

13. Learn how to rebalance the system after processor failure and recovery.

14. Learn steps to recover from a downed disc drive or I/O controller failure.

15. Learn techniques for trouble shooting and fixing terminal problems.

16. Learn how to monitor the textfile and to expand it in emergency situations.

First Week

MONDAY

I. OVERVIEW OF SYSTEM/55
   HARDWARE
   SOFTWARE
   DATA BASE

TUESDAY

I. COMMAND INTERPRETERS (SII & TANDEM)
II. FSTAT
III. PSTAT

WEDNESDAY

I. FUP
II. FIND
III. PERCENT
IV. DISKINFO
V. PROGRAM REVISION LEVELS

THURSDAY

I. BACKUP/RESTORE
II. TAPE
III. MAINT
IV. EDIT
V. OBEY

FRIDAY

I. SOFTWARE OVERVIEW
II. CONFIG FILE
III. PROCESS SECURITY

Second Week

MONDAY

I. PUP
II. VUP

TUESDAY

I. SCHEDSET
II. BUSY
III. READYQ
IV. REQUEST FUNCTIONS
V. AOPR
VI. SYSTEM SHUTDOWN/STARTUP

WEDNESDAY

I. SPOOLING SYSTEM
II. SCAN
III. SPOOLCOM

THURSDAY

I. VDT CONTROL FILE
II. TROUBLESHOOTING
III. EXPAND NETWORK

FRIDAY

I. FINAL

The CPU Cabinet

PROCESSOR MODULES

- 4 max. per CPU Cabinet
- 16 max. per System (4 CPU Cabinets)

CONTROLLER BOARDS

CONNECTS PROCESSORS & DEVICES

- Dual ported — CONNECTED TO 2 PROCESSORS
- Memory Buffered
- Connect to devices via patch panels

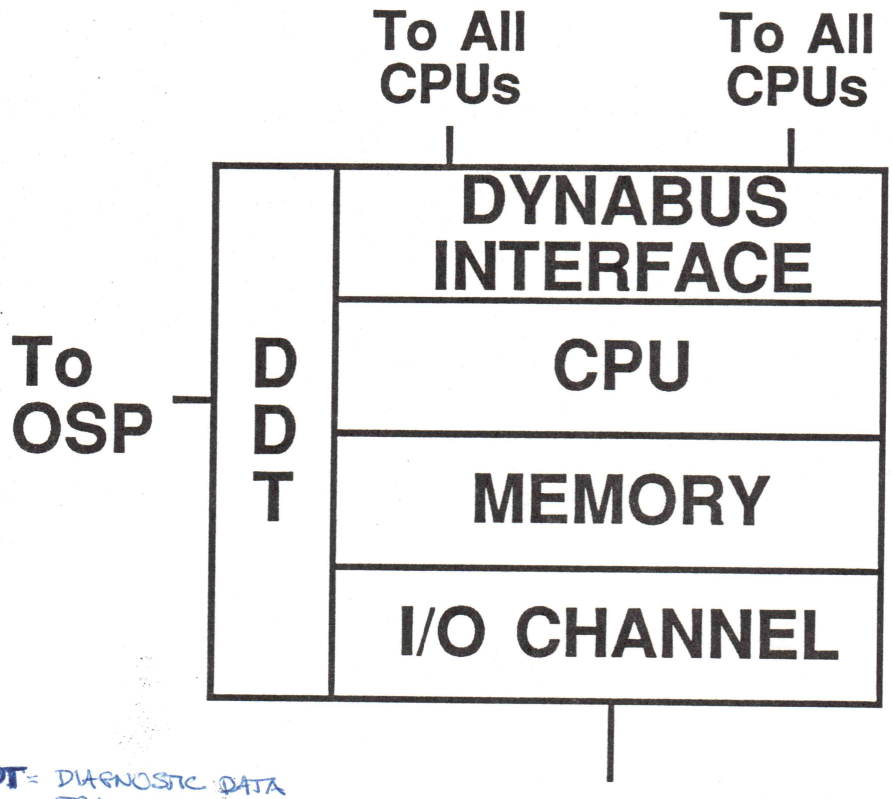
NON STOP DISK CONTROLLERS
- XTM (XTENDED TRANSACTION MODULE) – FOR COYOTES 16 COYOTES EA. MAX
- FTM (FAULT TOLERANT MODULES) = 2 XTM BOARDS JOINED
- UCIA (UNIVERSAL COMMUNICATIONS INTERFACE ADAPTER) PRINTERS, MODEMS ETC. UP TO 16
- TAPE CONTROLLER – UP TO 2 DRIVES
- BYTE SYNC CONTROLLERS - TCU, VCU, EXPAND NETWORK
- ASYNC CONTROLLERS
- UNIVERSAL CONTROLLERS – LINE PRINTERS

POWER SUPPLIES

- 1 for each CPU
- work independently of each other

PLUS BATTERY BACKUPS – POWER FOR 60 MINS.

Processor Module



- INDEPENDENT OF CPU
- ALLOWS COMMUNICATION BETWEEN PROCESSORS

X BUS, Y BUS SO REDUNDANT

4 SETS OF 2 MB eq.

SEPARATE PROCESSOR FOR I/O

DDT = DIAGNOSTIC DATA TRANSCEIVER

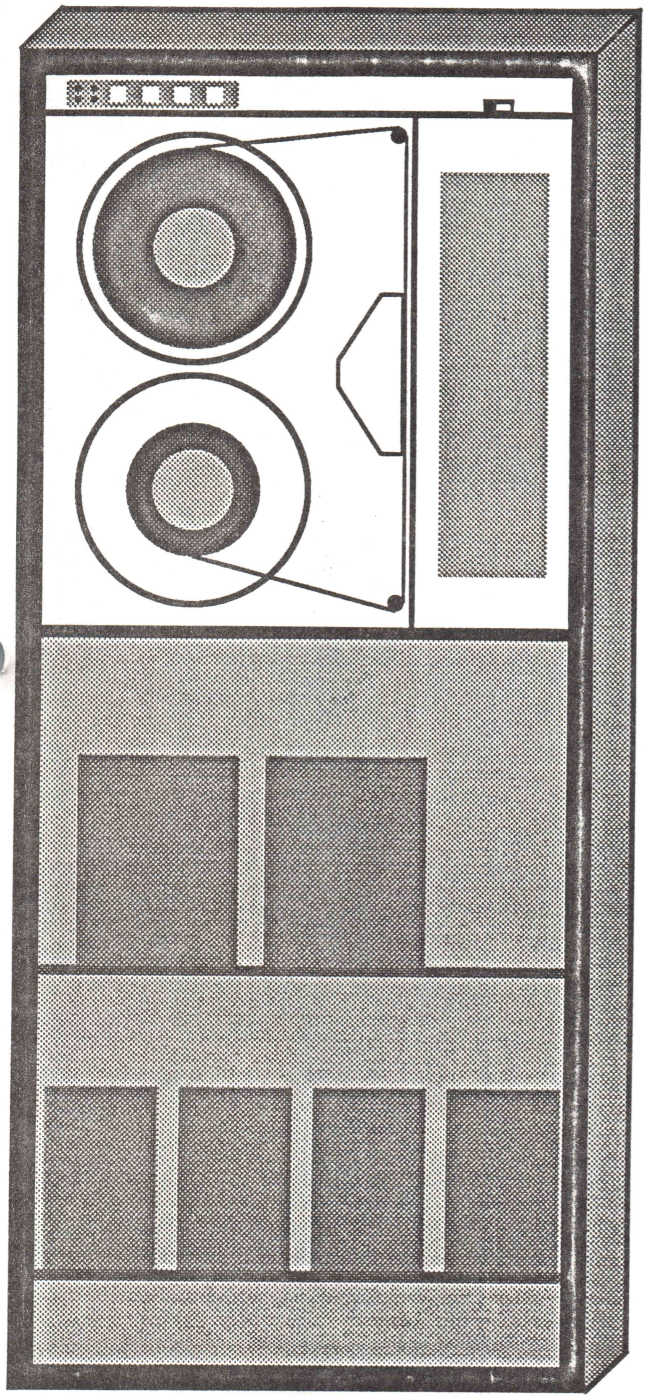
1) COMM. BETWEEN PROCESSOR & OSP FOR OPERATION, MAINTENANCE, DIAGNOSTICS
2) MONITORS STATUS OF ALL - PASSES ERRORS TO OSP

→ TO DEVICES THEMSELVES

TXP ONLY - HAS CACHE MEMORY AS WELL — 64K

OSP - TNS2, TXP ONLY
SUBS FOR FRONT PANEL SWITCHES

The Tape Cabinet



TAPE DRIVE

- Provides off-line storage
- 45 or 125 IPS
- 800 or 1600 BPI
- Uses vacuum column

POWER SUPPLIES

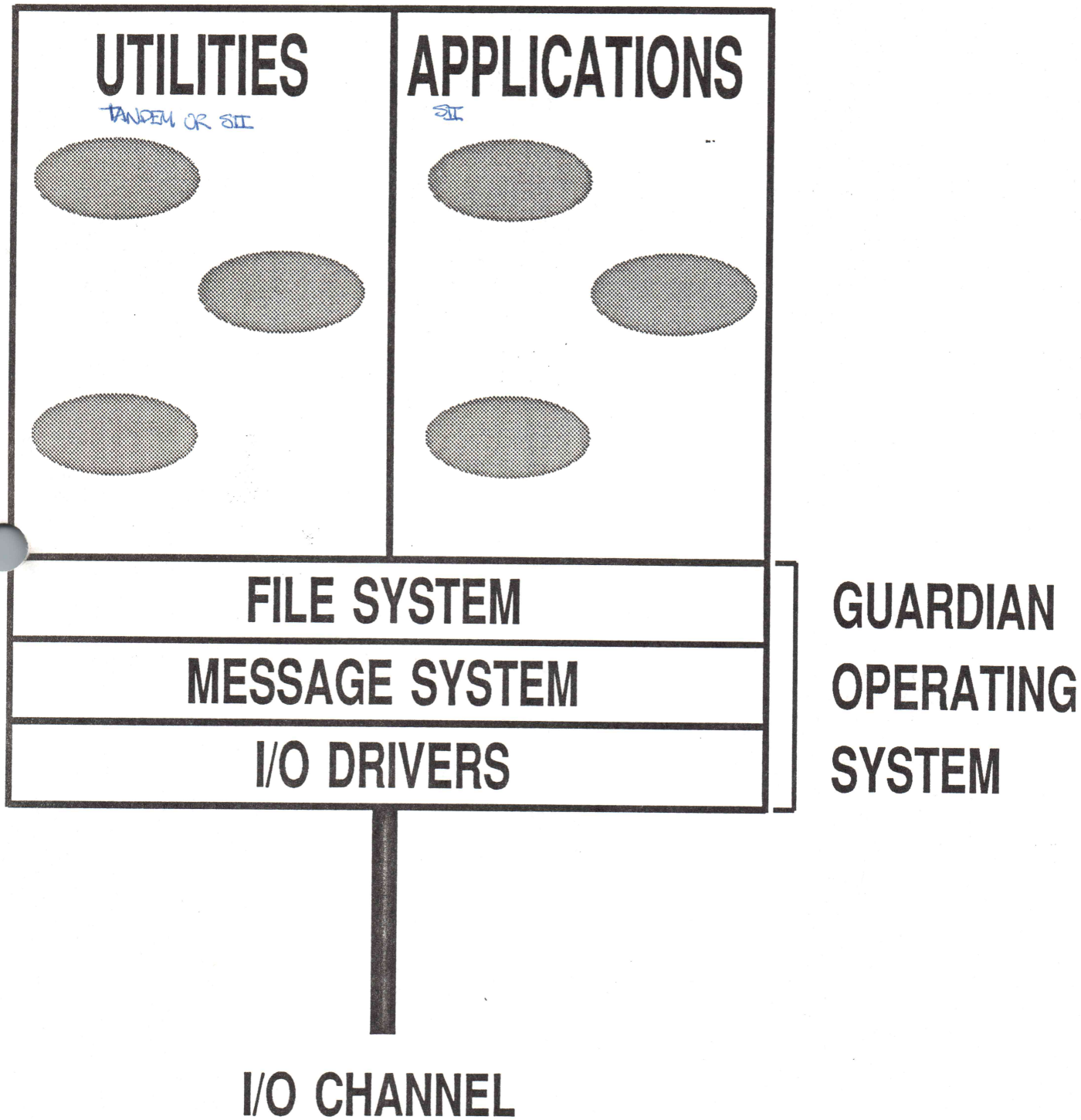
- Provide power to controller boards
- Fault tolerant

BATTERY BACKUPS for CPU POWER SUPPLIES

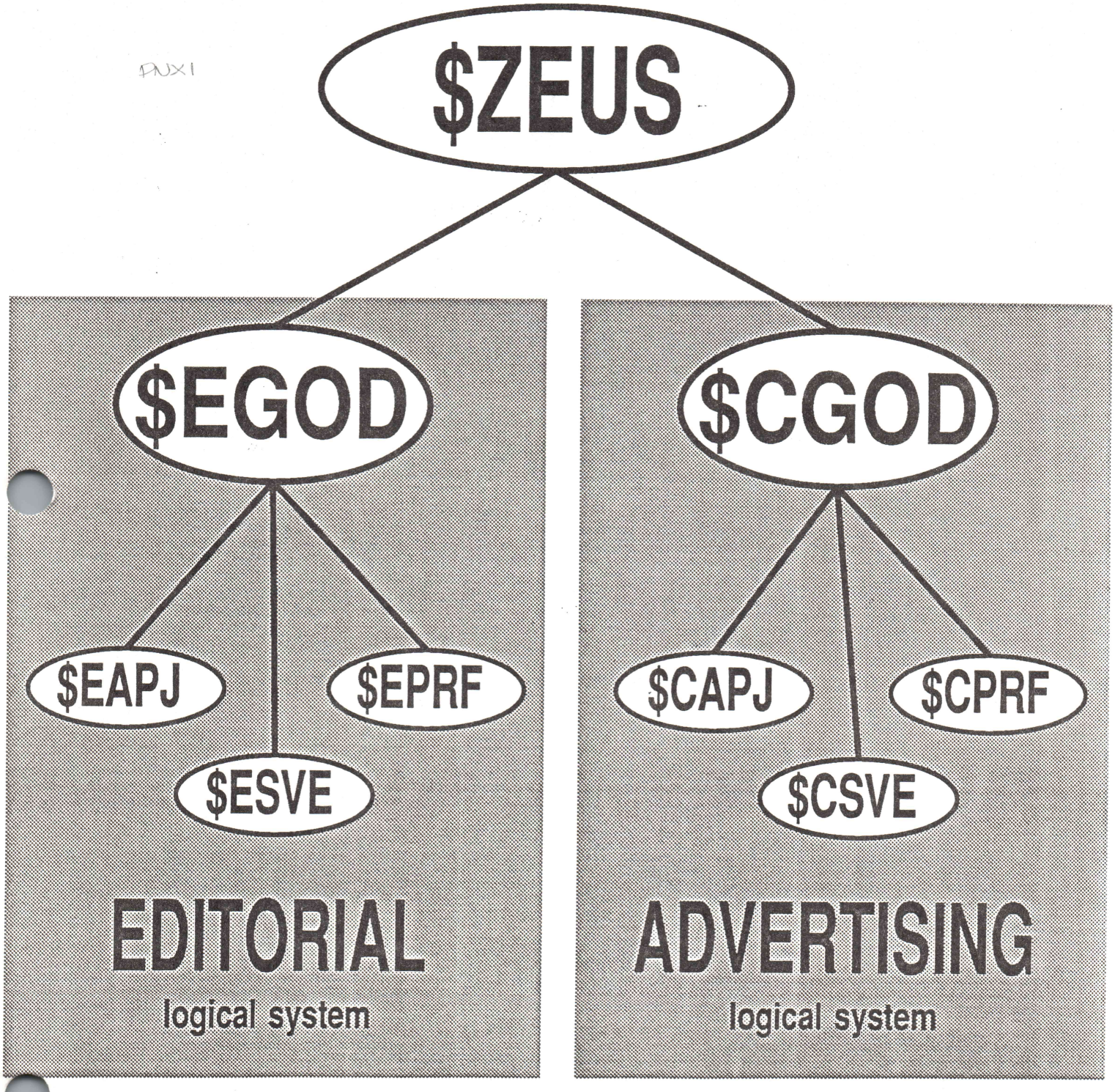
- 1 per CPU power supply
- Work independently of each other

CONTAINS BATCH PANELS

Software Types



Logical Systems



Relational Database

#	Topic	Keyword		Author	
1	Sports	Baseball		Bob	
2	Health	Jogging		Jill	
3	Sports	Football		Mike	
4	Pets	Care		Bob	
5	Antique	Autos		Al	
•	•	•	•	•	•
•	•	•	•	•	•
n	History	Baseball		Bob	

with Alternate keys

'AU'

Author	#
Al	5
Bob	1
Bob	4
Bob	n
Jill	2
Mike	3

'KE'

Keyword	#
Autos	5
Baseball	1
Baseball	n
Care	4
Football	3
Jogging	2

COMINT

Tandem Command Interpreter

File name = $SYSTEM.SYSTEM.COMINT

The Tandem Command Interpreter provides an interface to the GUARDIAN Operating System.

A startup Tandem Command Interpreter called $Z000 begins executing when the system is cold loaded from disc. When a COMINT is running on an online terminal (i.e. $OSP, $CONSOLE), it asks for commands by displaying a colon (:). No operations can be performed until the user has been identified through the LOGON command.

The list below describes some of the COMINT Commands. For additional Commands and more detail see GUARDIAN Operating System Command Language and Utilities Manual.

* **ADDUSER**	Add Tandem users
ALTPRI	Alters a process [-pair] 's execution priority
* **BACKUPCPU**	Used to a specify backup processor for a COMINT not currently executing as a process-pair or delete the backup process of a COMINT
* **COMMENT**	Used to put text comments into the command stream
* **DEFAULT**	Changes the default setting for the current user's volume and subvolume and sets the default disc file security
* **DELUSER**	Delete Tandem users
* **EXIT**	Stops the Command Interpreter and its backup (if any)
FC	Used to edit the command line
FILES	Displays file names
* **LOGOFF**	Terminates communications with the Command Interpreter
LOGON	Establishes communications with the Command Interpreter
* **OBEY**	Instructs the Command Interpreter to execute a series of commands from a user-specified file created through EDIT
* **PASSWORD**	Changes the Tandem password of the current user

* ***Command available in TANDEM's COMINT ONLY***

PAUSE	Command Interpreter stops prompting for commands
PPD	Displays the processes in the Process-Pair Directory NAMED
RELOAD	Reloads the operating system image into a processor module
***REMOTE-PASSWORD**	Defines a remote password for use in network security
RENAME	Used to rename a disc file
RUN	Used to run a program (starts a process)
***SETTIME**	Set system's date and time of day clocks
STATUS	Displays the state of processes running in the system
STOP	Stops a program from running (deletes a process)
SYSTEM	Sets the 'default system' (for systems connected to networks)
TIME	Displays the current date and time-of-day
***USERS**	Displays the attributes of Users and Groups
VOLUME	Changes the current user's default volume and subvol name
WHO	Displays the process name and primary and backup cpu of the Command Interpreter, the default security and volume, subvolume and system of the current user.
***X/Y BUSUP**	Notifies operating system that designated bus is available for use.

**** Command available in TANDEM's COMINT ONLY***

FUP

Tandem File Utility Program
File name = $SYSTEM.SYSTEM.FUP

FUP is used to perform file related operations such as:

* Displaying File Information
* Displaying File Contents
* Creating, Duplicating Files
* Setting Disc File Security

The list below describes some of the FUP Commands and is grouped into categories of use. For additional Commands and more detail see GUARDIAN Operating System Command Language and Utilities Manual.

FUP CONTROL

EXIT	Terminate Fup
FC	Edit Command Line
HELP	Displays list of Fup Commands or syntax of a particular command
SYSTEM	Sets default system name to be used while executing FUP
VOLUME	Sets default volume and/or subvol to be used while executing FUP
CTRL Y	Stops Fup. Equivalent to typing EXIT

DISPLAYING FILE INFORMATION

FILES	Displays files on a particular volume or subvol
INFO	Displays file characteristics
SUBVOLS	Displays subvols on designated volume

FILE CREATION and ALTERATION

ALTER	Alters designated characteristics of a disc file
SET	Sets creation parameter values for a subsequent creation
SHOW	Displays current settings of the creation parameter values
CREATE	Creates a file using parameter values set up with SET

FILE COPY and CONTENTS DISPLAY

DUPLICATE	Makes an exact copy of a file
COPY	Makes a record by record copy between files on the same or different media

FILE EXTENT ALLOCATION/DEALLOCATION

ALLOCATE	Allocates a specified number of file extents for a disc file
DEALLOCATE	Deallocates extents past the eof extent for a disc file

FILE RENAME, PURGE, and LOADING

RENAME	Renames a disc file
PURGE	Deletes a disc file
PURGEDATA	Deletes the data from a disc file
LOADALTFILE	Loads a designated alternate key file with the alternate keyrecords of a specified structured disc file.

SECURITY

SECURE	Sets file security attributes for a disc file
GIVE	Changes a file owner id
LICENSE	Licenses a program file containing privileged procedures so thatit can be run by nonprevileged users.

File Security

Owner 254.254 RWEP A G O –				
Tandem User	**R**	**W**	**E**	**P**
255.255	X	X	X	X
255.254	X	–	–	–
254.255	X	X	X	–
254.254	X	X	X	–
254.100	X	X	–	–
000.255	X	–	–	–
000.100	X	–	–	–
000.000	X	–	–	–
\CHI.255.255	–	–	–	–
\CHI.254.255	–	–	–	–
\CHI.254.100	–	–	–	–
\CHI.000.255	–	–	–	–
\CHI.000.100	–	–	–	–

Owner 254.100 RWEP C U O G				
Tandem User	**R**	**W**	**E**	**P**
255.255	X	X	X	X
255.254	–	–	–	–
254.255	X	X	X	X
254.254	X	–	–	X
254.100	X	X	X	X
000.255	–	–	–	–
000.100	–	–	–	–
000.000	–	–	–	–
\CHI.255.255	X	X	–	–
\CHI.254.255	X	X	–	–
\CHI.254.100	X	X	–	–
\CHI.000.255	–	–	–	–
\CHI.000.100	–	–	–	–

FUP SECURITY VALUES

LOCAL

- = local super.super only

O = local owner only (same *group id* and *user id*), and local super.super and local group.super)

G = local group member (same *group id*), and local super.super

A = any local user

REMOTE

U = local or remote owner (same *group, user id*), and local/remote super.super and local/remote group.super

C = local or remote group member (same *group id*), and local/remote super.super

N = any user local or remote

;BACKUP <devicename>, <fileset-list> [, options]

;BACKUP $TAPE, $DATA.EDITOR.TEXTF

;BACKUP $TAPE, (*,$DATA.CLASS.*), LISTALL

LIST OF FILES TO BE OUTPUT

;BACKUP /OUT $S.#S.BACKUP/ $TAPE, *.*.*, LISTALL

LISTALL TO SPOOLER

;BACKUP $TAPE, *.*.*, OPEN

ALL FILES EVEN IF OPEN

;BACKUP $TAPE, $DATA.*.*, NOT $DATA.CLASS.*

;BACKUP $TAPE, $DATA.*.*, NOT (*, $DATA.CLASS.*)

;BACKUP $TAPE, *.*.*, PARTIAL JUL 13 1985, 12:00

ALL MODIF SINCE DATE/TIME

;BACKUP $TAPE, *.*.*, VERIFYTAPE

READ FILE TWICE TO VERIFY CONTENTS

;BACKUP $TAPE, *.*.*, START $DATA.OBEY.*

START AT SPECIFIED FILE TO BACKUP
ALPHABETICALLY BY VOL.SUBVOL.FILE

;RESTORE <devicename>, <fileset-list> [, options]

;RESTORE $TAPE, $DATA.EDITOR.TEXTF

;RESTORE $TAPE, (*,$DATA.CLASS.*), LISTALL

;RESTORE /OUT $S.#S.RESTORE/ $TAPE, *.*.*, LISTALL

;RESTORE $TAPE, $DATA.INPUT.*, KEEP

KEEP FILE IF ON DISK

;RESTORE $TAPE, $DATA.CLASS.*, VOL $DATA.NCLASS

RESTORE TO NEW VOL, SUBVOL

;RESTORE $TAPE, *.*.*, START $DATA.OBEY.SHUTDOWN

;RESTORE $TAPE, $DATA.*.*, NOT (*, $DATA.CLASS.*)

;RESTORE $TAPE, $SYSTEM.*.*, NOUNLOAD

TAPE DOESN'T REWIND AFTER RESTORE DONE

;RESTORE /OUT $S.#S.LISTING/ $TAPE,, LISTALL

JUST PRODUCES LIST — NO ACTUAL RESTORE

EDIT

Tandem Editor

File name = $SYSTEM.SYSTEM.EDIT

The TANDEM EDIT utility is used to create and maintain EDIT (OBEY) files.

The list below describes some of the EDIT Commands.
For additional reading and more commands see Tandem's EDIT manual.

EDIT COMMANDS

GET Specifies an EDIT file and makes it the current file for editing. Create a new file by specifying a non-existing file, you will then be given the option of creating it.

LIST Lists lines in current file. Specify a range by entering the first and last line numbers of the range separated by a slash.(EX: *LIST 1/5 or *LIST ALL)

ADD Allows the entering of new text to a new or existing EDIT file. You may specify a line number to start at, defaults to last line.You may also indicate a specific incrementation for the new lines using the BY parameter followed by a number. It will default to 1. **Enter // <CR> to exit the ADD mode.**

DELETE Removes a range of lines from the current EDIT file. (EX: *DELETE 1/5)

NUMBER This command renumbers lines. It does NOT alter the order of their occurence. You may also specify ranges and increments. (EX: *NUMBER ALL TO 100 BY 5)

FIX Allows you to interactively modify text lines. Specify a range of lines if you wish to fix a line other than the current line.

FIX SUBCOMMANDS

D elete character above D's.

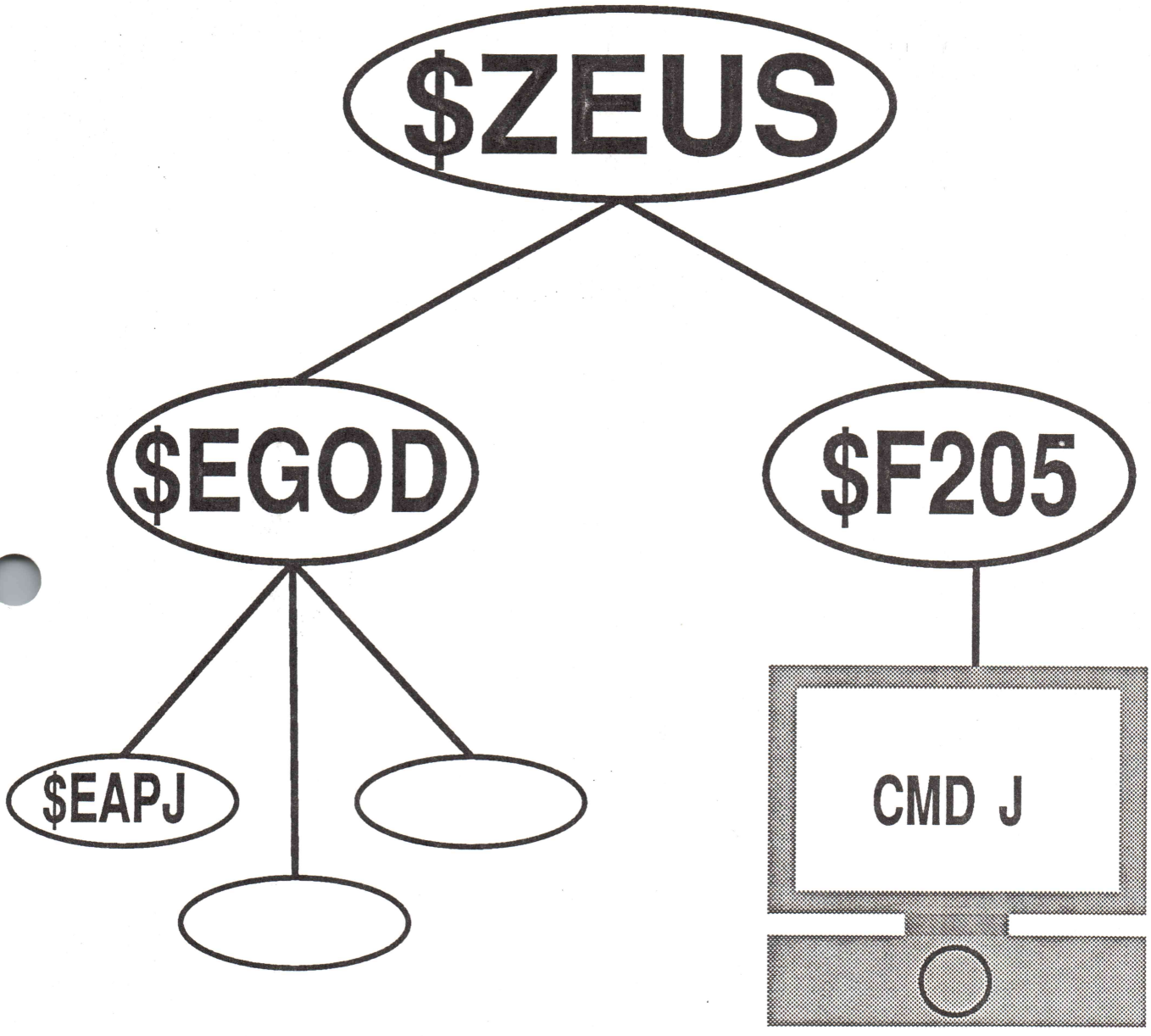
I nsert string typed after **I** at the location *above* the **I**.

R eplace above characters with string following the **R**.

To ignore changes enter // <CR> at the .... prompt.

To exit FIX enter a <CR> at the .... prompt.

REQUESTORS and SERVERS



The CONFIG form

File name = $SYSTEM.SYSDATA.CONFIG

System _ Record Type ___ Process Type ___ Record #.....
Process Name $F108
Program File Name _____
Primary CPU __ Alternate CPU __ Available CPUs _____ IF -1 TRY ALL CPUS, 0 TRY NONE
Priority ___ Alt Priority ___ Threshold n Server _____ IF n REQUESTS, ALTER PRI.
Server Class _____ Reference Name _____
Home Terminal _____ Rund _
Input File Name _____
Output File Name _____
Parameter String

E ;$DATA.VPEUP.F108 ;;; $F1.#F08

SYSTEM — FILE TO HOLD PARTS OF TEXT FOR SCROLLING — RIGHT HAND SIDE ALSO OPENED BY ECONTROL

= ;RUN $DATA.SYS.ECONTROL /NAME $F108, CPU 1, PRI 140, OUT $F1.#F08/

PUP

Tandem Peripheral Utility Program

File name = $SYSTEM.SYSTEM.PUP

The main purpose of the Tandem Peripheral Utility is to perform various peripheral related operations such as:

* Listing devices attached to the system
* Listing free space on a volume
* Switching the primary path of a device
* Removing a device from the system configuration

The list below describes some of the PUP Commands. For additional Commands and more detail see Tandem's SYSTEM OPERATIONS MANUAL.

PUP CONTROL

EXIT	Terminate Pup
FC	Edit Command Line
HELP	Displays list of Pup Commands or syntax of a particular command
COMMENT	Used to enter comments. Pup will ignore rest of line.

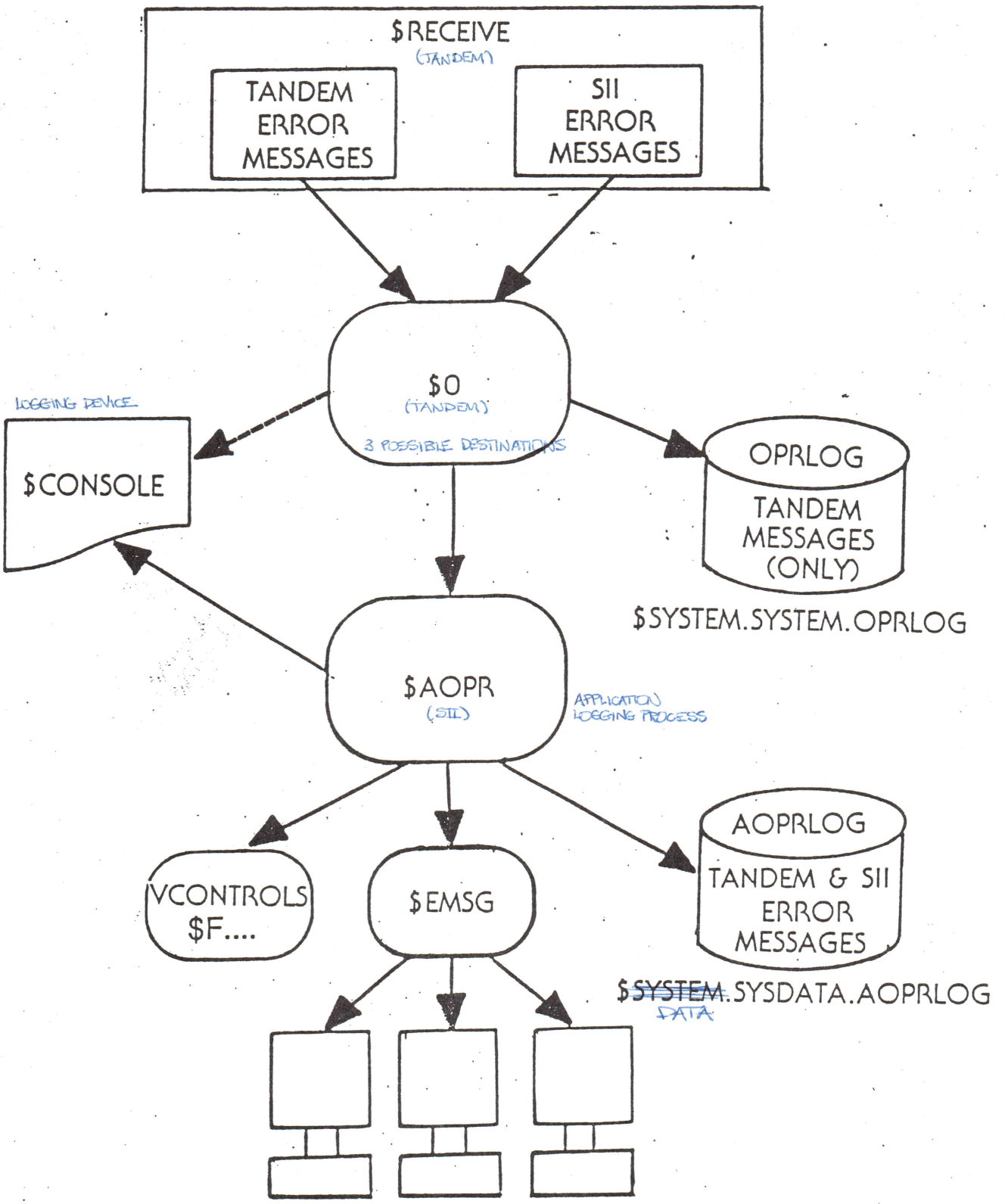
PUP COMMANDS

COPY	Creates a backup copy of one volume to another
FORMAT	Used to initialize a new disc pack
LABEL	Writes a label on formatted disc pack
LISTBAD	List sectors marked as bad on a disc pack
LISTFREE	List number of free disc pages, size of contiguous blocks of free pages, number of files, estimated maximum number of files, and system space on specified volume.
LISTSPARES	Lists assigned spare tracks on a specified volume
REFRESH	Writes eof pointers contained in File Control Blocks in main memory
REMOVE	Used before removing one pack of a mirrored volume
REVIVE	Used to bring a downed device of a mirrored volume back into system operation.
DOWN	Used to make a device inaccessible
LISTDEV	List configuration characteristics of system devices
PRIMARY	Used to specify the primary path for a device
UP	Used to make a downed device accessible to the system
CONSOLE	Used to specify the console device

PUP LISTDEV

LDEV	NAME	STATE	PPID	PCU	BPID	BCU	DMNT	TYPE	SUBTYPE	RECSIZE
0		ON	01,003		00,003			1	0	102
1	$NCP		01,004		00,004			62	0	0
3	$OSP		01,005		00,005			6	0	80
4	$SYSTEM-P	*	00,006	%100	01,006	%100		3	3	4096
	$SYSTEM-B		00,006	%110	01,006	%110				
	$SYSTEM-M	*	00,006	%101	01,006	%101				
	$SYSTEM-MB		00,006	%111	01,006	%111				
5	$DATA-P	*	01,007	%112	00,007	%112		3	3	4096
	$DATA-B		01,007	%102	00,007	%102				
	$DATA-M	*	01,007	%113	00,007	%113				
	$DATA-MB		01,007	%103	00,007	%103				
6	$TAPE		00,008	%30	01,008	%30		4	0	4096
7	$TAPE1		00,009	%31	01,009	%31		4	0	2048
8	$LP		01,010	%21	00,010	%21		5	1	132
9	$IRI1		00,011	%140	01,011	%140		7	50	1024
10	$IRI2		00,011	%141	01,011	%141		7	50	1024
11	$IRI3		00,011	%142	01,011	%142		7	50	1024
12	$IRI4		00,011	%143	01,011	%143		7	50	1024
13	$T6530		00,012	%144	01,012	%144		6	4	80
14	$OKI		00,012	%145	01,012	%145		6	32	132
15	$SLP		00,013	%146	01,013	%146		7	50	132
16	$QUME1		00,014	%147	01,014	%147		7	50	132
17	$LASR		00,011	%150	01,011	%150		7	50	132
18	$APHI		00,011	%151	01,011	%151		7	50	1024
19	$WISPIN		00,011	%152	01,011	%152		7	50	1024
20	$WISPOUT		00,011	%153	01,011	%153		7	50	1024
21	$CENT		00,011	%154	01,011	%154		7	50	132
22	$BCR		00,011	%155	01,011	%155		7	50	132
23	$DIAB1		00,015	%156	01,015	%156		7	50	132
24	$UCIA115		00,011	%157	01,011	%157		7	50	1024
25	$LHLINK-P	D	00,016	%202	01,016	%202		63	0	47
	$LHLINK-B	D	00,016	%203	01,016	%203				
26	$LHHDWR-P		00,017	%204	01,017	%204		63	0	47
	$LHHDWR-B		00,017	%205	01,017	%205				
27	$LHSIIP-P		00,018	%206	01,018	%206		63	0	47
	$LHSIIP-B		00,018	%207	01,018	%207				
28	$F1		00,019	%240	01,019	%240		7	51	4096
29	$F2		01,020	%260	00,020	%260		7	51	4096
30	$F3		00,021	%300	01,021	%300		7	51	4096
31	$F4		01,022	%320	00,022	%320		7	51	4096
32	$F5		01,023	%340	00,023	%340		7	51	4096
33	$F6		00,024	%360	01,024	%360		7	51	4096

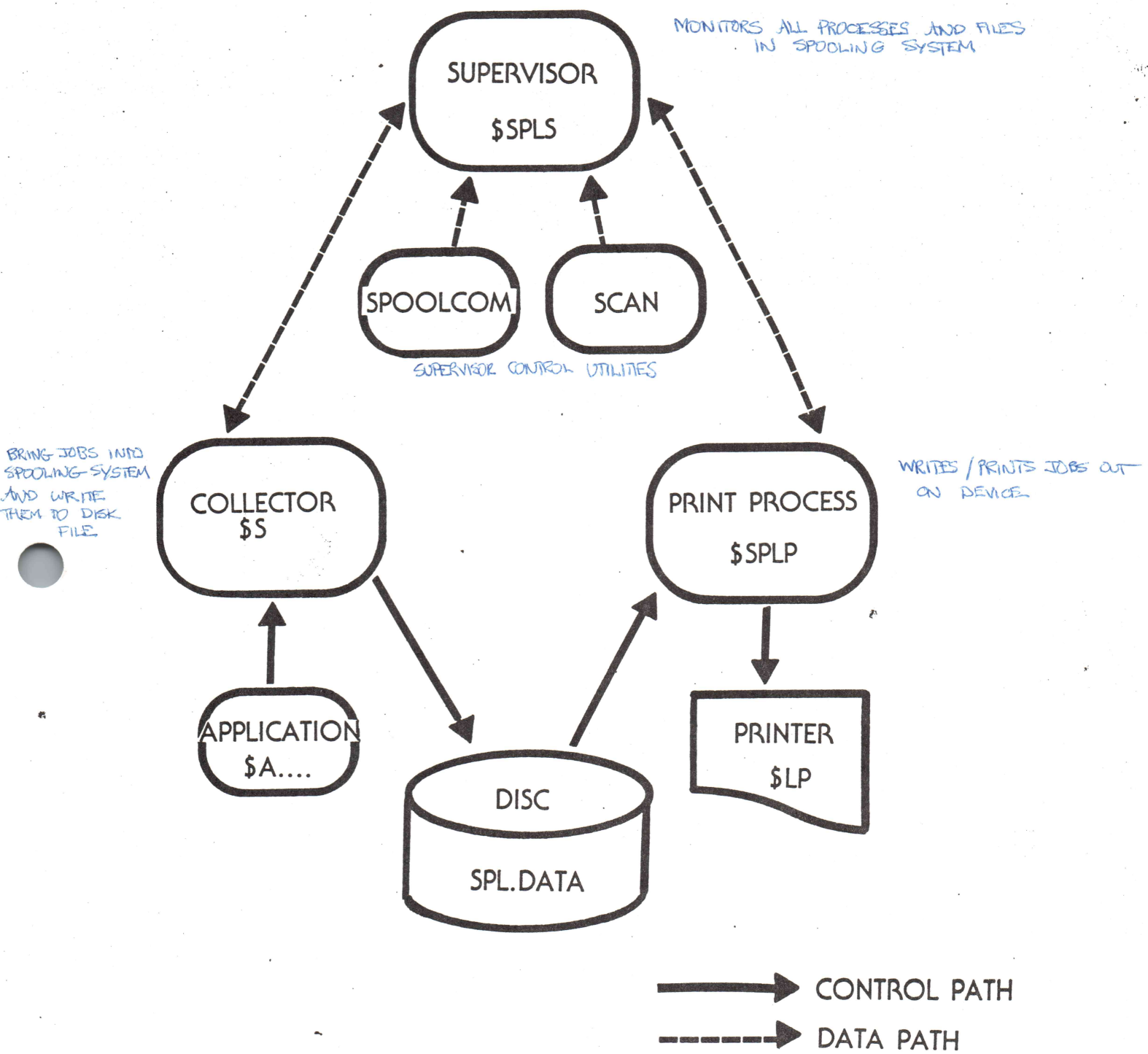
AOPR PROCESS



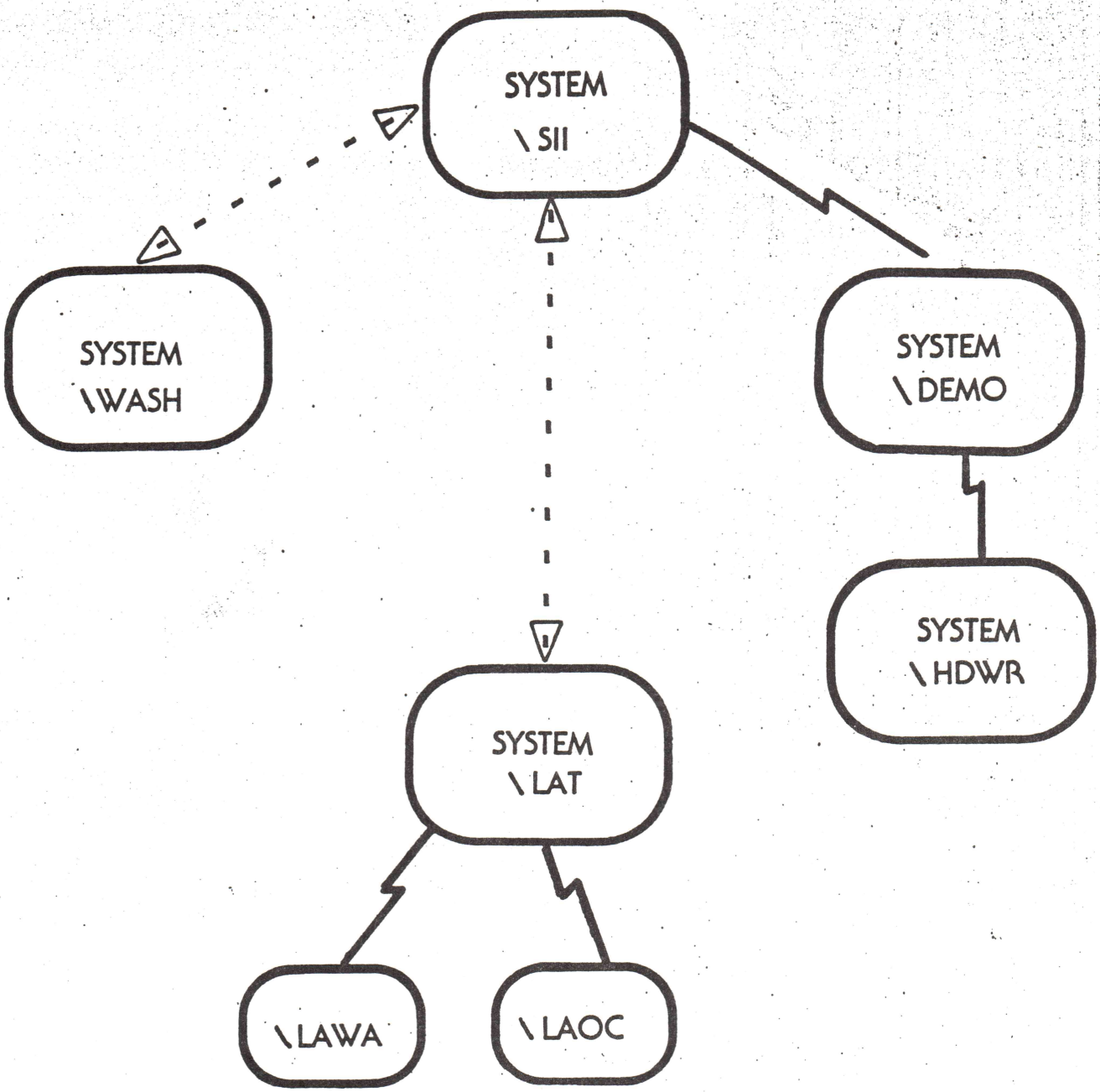
Major benefits of the $AOPR process:

1. Broadcasts TANDEM error messages to terminals.
2. Logs SII error messages to a disc file (AOPRLOG).
3. Allows up to four additional console logging devices.

COMPONENTS OF SPOOLER



EXPAND NETWORK



In the beginning, the Universe was cool and motionless, and Guardian slumbered unknowingly.

But a humanoid structure, rude and demanding, requested of $ZOOO that he roust Guardian, so $ZOOO begat $ZEUS -- and a whole slew of other offspring, large and small, some that would wait, some that would not, some who would serve -- and some who would just demand, demand, demand.

Some of $ZOOO's descendants had babies of their own, most notably $IMON, who quickly had four little demons -- $DMOO, $DMO1, $DMO2 and $DMO3.

Knowing of Guardian's voracious appetite for processes small and large, $ZOOO became the proud grandelderprocess of three grandyoungerprocesses, $IB, $INSV and $IP (all produced courtesy of parental process $ISPL).

And, without hesitation nor concern about what her neighbors in Cee Pee You Three would say, $SPLS single-parented an only process, $S, who had the tender process id number of 16.

Meanwhile, at the other end of this vast silicon delivery room, $ZEUS was busy begetting $EGOD and $CGOD -- two intelligent, responsible beings who believe in always backing themselves up -- and an alphabet soup of stand-alones, who ranged from the wide-open (but highly moral) $A* down to a process who would appear to be much in tune with the rest of the Chosen First Few, $SYNC.

After that, $ZEUS took a much needed (and deserved) break, because he knew he had some able overseers in the forms of $EGOD and $CGOD watching many of the electrons flow.

While it's true that $CGOD and $EGOD were not has prolific as $ZEUS, it must be recognized that he's a tough act to follow. And . . . well, they gotta lotta offspring, too. They begat many processes, all of them well-respected by others in the hierarchy. Some of them are virtual first cousins -- $CPRF and $EPRF, to name two -- and all of them do handsprings on behalf of a lower life-form, the User.

By now, as you can imagine, the Guardian's memory had become a veritable cornucopia of processes eager to request and eager to serve. $EGOD ruled from his Ivory Tower high above the Land of E*, and $CGOD held the pursestrings in the Land of $C*.

And $ZOOO? The obedient first ancestor? The one who started it all? Well, he's still hanging around in the background, chewing the fat with his best buddies, $OSP and $RECEIVE. (Matter of fact, that's all he does any more.)

And that's the rest of the story. . . .

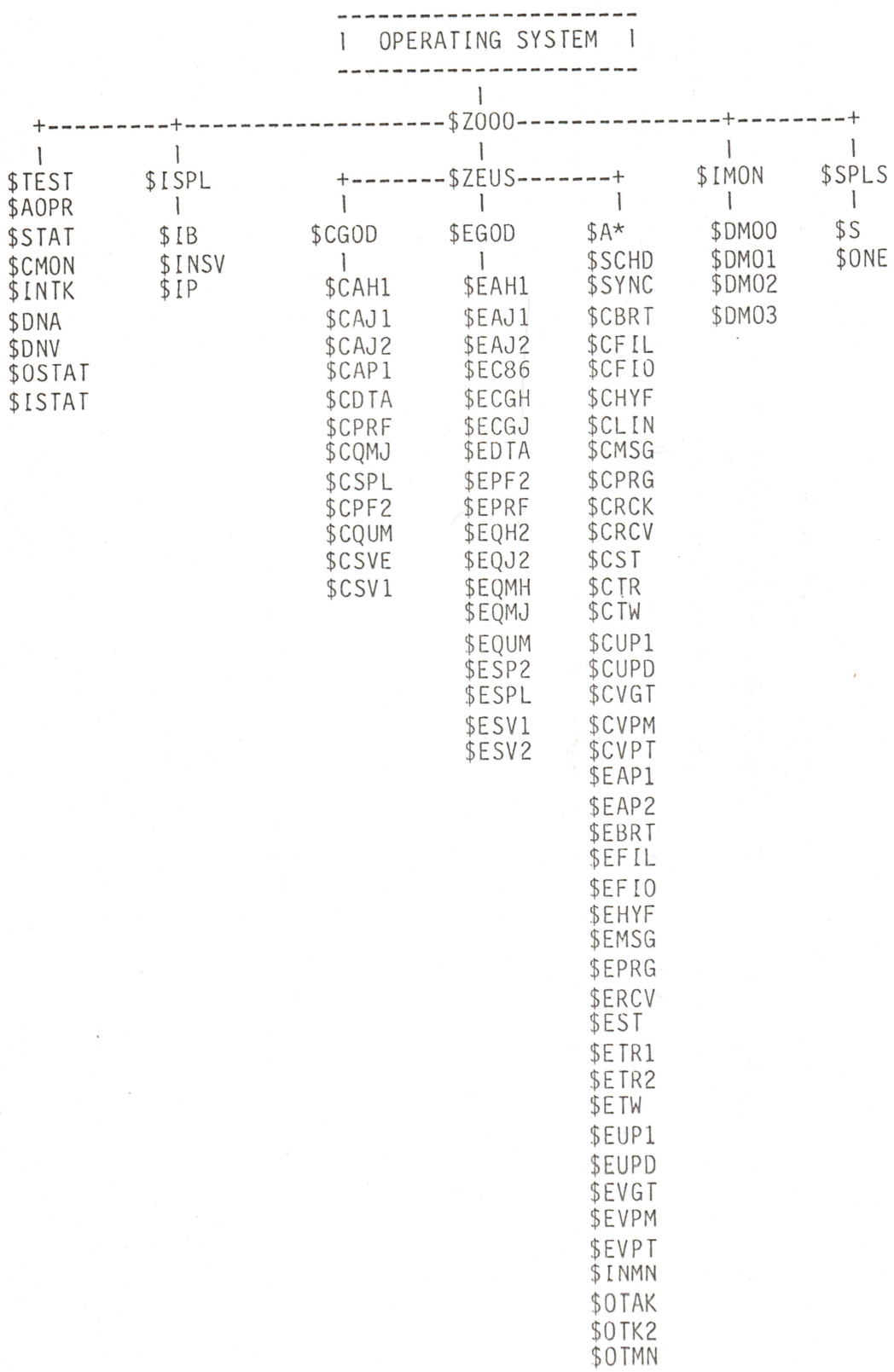
ANY PID IN ANCESTOR =ZOOD

PPD LISTING

NAME	PID1	PID2	ANCESTOR
$ZOOO	00,016	01,022	
$CMON	00,017	01,023	$ZOOO
$IMON	01,024	00,019	$ZOOO
$DM00	00,018		$IMON
$DM01	01,025		$IMON
$DM02	02,016		$IMON
$DM03	03,010		$IMON
$ISPL	01,027	02,018	01,026
$IP	01,028	02,020	$ISPL
$IB	02,019	03,013	$ISPL
$INSV	03,011		$ISPL
$INTK	02,017	03,014	01,026
$A310	01,026		$ZEUS
$DNA	02,021	03,015	03,012
$DNV	01,029	00,021	03,012
$SPLS	03,012	02,023	01,030
$S	03,016	02,039	$SPLS
$OSTAT	00,022		03,017
$ISTAT	01,030		03,017
$STAT	02,022		03,017
$ZEUS	03,017	02,043	$ZOOO
$EGOD	03,018	02,037	$ZEUS
$CGOD	03,019	02,032	$ZEUS
$EPRG	01,031		$ZEUS
$CPRG	02,024		$ZEUS
$EPRF	03,020		$EGOD
$CPRF	01,032		$CGOD
$OTK2	02,025		$ZEUS
$EST	03,021		$ZEUS
$EDTA	01,033		$EGOD
$CST	03,022		$ZEUS
$CDTA	03,023		$CGOD
$ESPL	02,026		$EGOD
$OTAK	02,027		$ZEUS
$CSVE	01,034	00,038	$CGOD
$ETW	00,023	01,038	$ZEUS
$ESV1	01,035		$EGOD
$CTW	00,025	01,037	$ZEUS
$ETR2	02,028		$ZEUS
$CAJ1	01,036		$CGOD
$ESV2	02,029		$EGOD
$EAJ1	03,024		$EGOD
$CSPL	02,030		$CGOD
$CTR	00,026		$ZEUS
$ETR1	00,027		$ZEUS
$CAP1	03,025		$CGOD
$EMSG	03,026	02,031	$ZEUS
$CAH1	01,039		$CGOD
$EAH1	03,027		$EGOD
$CMSG	01,040	00,029	$ZEUS
$CPF2	03,028		$CGOD
$EAJ2	01,041		$EGOD
$CSV1	03,029	02,057	$CGOD
$CQMJ	01,042		$CGOD
$EQUM	01,043		$EGOD
$EQMJ	03,030		$EGOD
$CQUM	03,031		$CGOD
$CAJ2	03,032		$CGOD

NAME	PID1	PID2	ANCESTOR
$EQMH	01,044		$EGOD
$EVPT	00,028		$ZEUS
$ESP2	03,033		$EGOD
$EQH2	03,034		$EGOD
$ECGJ	02,033		$EGOD
$EQJ2	01,045		$EGOD
$EPF2	02,034		$EGOD
$ECGH	01,046		$EGOD
$CVPT	00,030		$ZEUS
$EUPD	01,047	00,036	$ZEUS
$CUPD	03,035	02,046	$ZEUS
$EC86	02,035		$EGOD
$CUP1	02,036	03,044	$ZEUS
$EUP1	03,036	02,045	$ZEUS
$EFIO	00,024	01,049	$ZEUS
$CFIO	00,032	01,050	$ZEUS
$EHYF	02,038		$ZEUS
$CHYF	03,037		$ZEUS
$EVGT	00,031		$ZEUS
$CVGT	00,033		$ZEUS
$EAP1	02,040		$ZEUS
$EAP2	01,051		$ZEUS
$ERCV	03,038		$ZEUS
$CRCV	01,052		$ZEUS
$INMN	03,039		$ZEUS
$EFIL	03,040		$ZEUS
$CFIL	01,053		$ZEUS
$EBRT	03,041		$ZEUS
$CBRT	01,054		$ZEUS
$OTMN	01,055		$ZEUS
$CVPM	00,034		$ZEUS
$EVPM	00,035		$ZEUS
$SCHD	02,041	03,043	$ZEUS
$CLIN	03,042	02,044	$ZEUS
$CRCK	02,042		$ZEUS
$TEST	02,047	00,037	$ZOOO
$AOPR	01,066	00,020	$ZOOO
$SYNC	00,039		$ZEUS
$ONE	01,083		$SPLS
$A513	02,062		$ZEUS
$A514	01,069		$ZEUS
$A505	01,070		$ZEUS
$A515	03,058		$ZEUS
$A114	03,059		$ZEUS
$A014	03,060		$ZEUS
$A315	02,063		$ZEUS
$A201	01,071		$ZEUS
$A202	03,061		$ZEUS
$A203	02,064		$ZEUS
$A204	01,072		$ZEUS
$A205	03,063		$ZEUS
$A206	02,065		$ZEUS
$A207	01,073		$ZEUS
$A208	03,062		$ZEUS
$A209	02,066		$ZEUS
$A210	01,074		$ZEUS
$A211	03,064		$ZEUS

SOFTWARE HIERARCHY



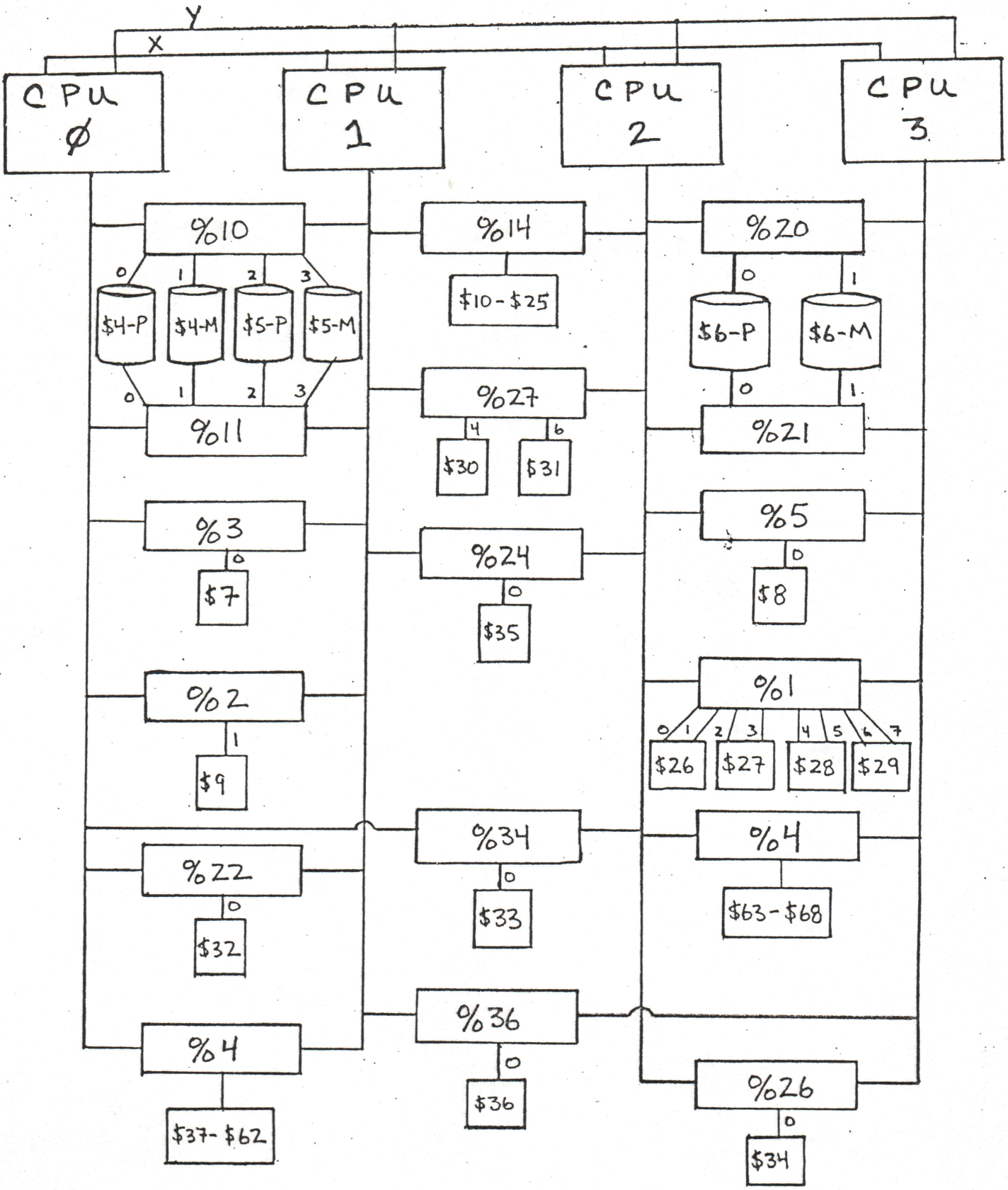
LISTDEV FOR BLOCK DIAGRAM

;pup listdev

LDEV	NAME	STATE	PPID	PCU	BPID	BCU	DMNT	TYPE	SUBTYPE	RECSIZE
0		ON	00,003		01,003			1	0	102
1	$NCP		00,004		01,004			62	0	0
3	$OSP		00,005		01,005			6	0	80
4	$SYSTEM-P	*	00,006	%100	01,006	%100		3	6	4096
	$SYSTEM-B		00,006	%110	01,006	%110				
	$SYSTEM-M	*	00,006	%101	01,006	%101				
	$SYSTEM-MB		00,006	%111	01,006	%111				
5	$DATA-P	*	01,007	%112	00,007	%112		3	4	4096
	$DATA-B		01,007	%102	00,007	%102				
	$DATA-M	*	01,007	%113	00,007	%113				
	$DATA-MB		01,007	%103	00,007	%103				
6	$DATA1-P	*	02,005	%200	03,003	%200		3	6	4096
	$DATA1-B		02,005	%210	03,003	%210				
	$DATA1-M	*	02,005	%201	03,003	%201				
	$DATA1-MB		02,005	%211	03,003	%211				
7	$TAPE		00,008	%30	01,010	%30		4	0	2048
8	$TAPE1		02,007	%50	03,005	%50		4	2	2048
9	$LP1		00,009	%21	01,011	%21		5	1	132
10	$IRI1		01,012	%140	02,009	%140		7	50	1024
11	$IRI2		01,012	%141	02,009	%141		7	50	1024
12	$IRI3		01,012	%142	02,009	%142		7	50	1024
13	$IRI4		01,012	%143	02,009	%143		7	50	1024
14	$PC1		01,012	%144	02,009	%144		7	50	1024
15	$PC2		01,012	%145	02,009	%145		7	50	1024
16	$DIAB1		01,012	%146	02,009	%146		7	50	132
17	$QUME2		01,012	%147	02,009	%147		7	50	132
18	$DIAB3		01,012	%150	02,009	%150		7	50	132
19	$DIAB4		01,012	%151	02,009	%151		7	50	132
20	$DIAB5		01,012	%152	02,009	%152		7	50	132
21	$ACU		01,013	%153	02,010	%153		6	32	512
22	$MODEM		01,013	%154	02,010	%154		6	32	512
23	$OKI1		01,014	%155	02,011	%155		7	50	132
24	$DIAB6		01,012	%156	02,009	%156		7	50	132
25	$DIAB7		01,012	%157	02,009	%157		7	50	132
26	$LH1-P		02,012	%10	03,008	%10		63	0	47
	$LH1-B		02,012	%11	03,008	%11				
27	$LH2-P		02,013	%12	03,009	%12		63	0	47
	$LH2-B		02,013	%13	03,009	%13				
28	$LHCT1-P		02,014	%14	03,010	%14		63	0	19
	$LHCT1-B		02,014	%15	03,010	%15				
29	$LHCT2-P		02,015	%16	03,011	%16		63	0	19
	$LHCT2-B		02,015	%17	03,011	%17				
30	$R2		02,018	%274	01,021	%274		7	7	4096
31	$I1		02,019	%276	01,022	%276		7	7	4096
32	$F1		00,024	%220	01,028	%220		7	51	4096
33	$F2		02,027	%340	00,025	%340		7	51	4096
34	$F3		03,019	%260	02,026	%260		7	51	4096
35	$F4		01,029	%240	02,028	%240		7	51	4096
36	$F5		03,022	%360	01,030	%360		7	51	4096

LISTDEV FOR BLOCK DIAGRAM

37	$DEC1	00,030 %40	01,031 %40	6	32	132
38	$TERM1	00,030 %41	01,031 %41	6	4	80
39	$TERM2	00,030 %42	01,031 %42	6	4	80
40	$TERM3	00,030 %43	01,031 %43	6	4	80
41	$QUME1	00,030 %46	01,031 %46	6	32	1024
42	$DIAB8	00,030 %47	01,031 %47	6	32	1024
43	$TERM6	00,030 %50	01,031 %50	6	4	80
44	$TERM7	00,030 %51	01,031 %51	6	4	80
45	$TERM8	00,030 %52	01,031 %52	6	4	80
46	$TERM9	00,030 %53	01,031 %53	6	4	80
47	$TERM10	00,030 %54	01,031 %54	6	4	80
48	$TERM11	00,030 %55	01,031 %55	6	4	80
49	$TERM12	00,030 %56	01,031 %56	6	4	80
50	$TERM13	00,030 %57	01,031 %57	6	4	80
51	$TERM14	00,030 %60	01,031 %60	6	4	80
52	$TERM17	00,030 %63	01,031 %63	6	4	80
53	$TERM18	00,030 %64	01,031 %64	6	4	80
54	$TERM19	00,030 %65	01,031 %65	6	4	80
55	$TERM20	00,030 %66	01,031 %66	6	4	80
56	$TERM21	00,030 %67	01,031 %67	6	4	80
57	$TERM22	00,030 %70	01,031 %70	6	4	80
58	$TERM23	00,030 %71	01,031 %71	6	4	80
59	$TERM26	00,030 %74	01,031 %74	6	4	80
60	$TERM27	00,030 %75	01,031 %75	6	4	80
61	$TERM28	00,030 %76	01,031 %76	6	4	80
62	$TERM29	00,030 %77	01,031 %77	6	4	80
63	$REM1	02,030 %40	03,025 %40	6	4	80
64	$REM2	02,030 %41	03,025 %41	6	4	80
65	$TERM30	02,030 %42	03,025 %42	6	4	80
66	$TERM31	02,030 %43	03,025 %43	6	4	80
67	$TERM32	02,030 %44	03,025 %44	6	4	80
68	$TERM33	02,030 %45	03,025 %45	6	4	80


Y
X
CPU ∅
CPU 1
CPU 2
CPU 3
%10
0
1
2
3
$4-P
$4-M
$5-P
$5-M
0
1
2
3
%11
%3
0
$7
%2
1
$9
%22
0
$32
%4
$37-$62
%14
$10-$25
%27
4
6
$30
$31
%24
0
$35
%34
0
$33
%36
0
$36
%20
0
1
$6-P
$6-M
0
1
%21
%5
0
$8
%1
0
1
2
3
4
5
6
7
$26
$27
$28
$29
%4
$63-$68
%26
0
$34

15/15

SYSTEM OVERVIEW QUIZ

Name ROBERT SCHMIDT

1. What is the maximum amount of CPU's allowable:

   a. in one cpu cabinet ? 4

   b. in a TANDEM NON-STOP system ? 16

2. What kind of boards are located:

   a. in the top section of the CPU cabinet ? PROCESSOR

   b. in the middle section of the CPU cabinet ? CONTROLLER

3. What is the difference between a program and a process ?

   PROGRAM IS SET OF SOFTWARE ON DISK IN A FILE
   PROCESS IS 1 OR MORE VERSIONS OF PROGRAM RUNNING IN CPU

4. What is a PID ?

   PROCESS ID # (SYSTEM #, CPU #, RANDOM #)

5. What is the difference between a process running in non-stop mode vs. normal mode?

   NONSTOP - HAS PRIMARY AND BACKUP VERSIONS RUNNING IN 2 CPUS
   NORMAL - IS UNIQUE - NO BACKUP

6. Do all processes have names ?

   NO - ONLY NONSTOP PROCESSES

7. What are the two main benefits of having logical subsystems ?

   1. SECURITY / INDEPENDENCE
   2. SHARED RESOURCES

8. What are the three primary types of disc files ?

   1. PROGRAM - OBJECT CODE
   2. EDIT - C1 OR UTILITY COMMANDS
   3. DATA - DATA USED BY PROCESSES

9. What kind of database does the TANDEM support ?

   RELATIONAL

10. As an Editorial or Classified user, information is displayed to you in what two ways ?

LISTS & FORMS

11. What is the term used to describe the use of an alternate key file from prompts in Editorial and Classified ?

PATH

12. Match the system component to the best description of its **PRIMARY** function.

G CPU	A. Provides hardcopy of lists,stories,etc.
F Disc	B. Provides a direct linkup to another system
C FTM	C. Provides I/O to the COYOTE terminals
E OSP	D. Provides off-line data storage
A LP	E. to perform CPU diagnostics
I COYOTE	F. Provides on-line data storage
H Operating System	G. Controls transfer of data and performs arithmetic and logic calculations.
D Tape drive	H. Software that controls overall operation of the computer and assigns memory locations for programs and data.
	I. Allows Editorial user to create stories

TANDEM Security Exercise

NAME ROBERT SCHMIDT

Particular programs have the following security characteristics:

Owner	255.255			
RWEP	A	N	O	-
Tandem User	**R**	**W**	**E**	**P**
255.255	X	X	X	X
255.254	X	X	-	-
254.255	X	X	-	-
254.254	X	X	-	-
253.255	X	X	-	-
253.254	X	X	-	-
000.255	X	X	-	-
000.100	X	X	-	-
000.000	X	X	-	-
\SII.255.255	-	X	-	-
\SII.254.255	-	X	-	-
\SII.254.254	-	X	-	-
\SII.253.254	-	X	-	-
\SII.000.100	-	X	-	-
\SII.000.000	-	X	-	-

Owner	253.255			
RWEP	O	U	G	C
Tandem User	**R**	**W**	**E**	**P**
255.255	X	X	X	X
255.254	-	-	-	-
254.255	-	-	-	-
254.254	-	-	-	-
253.255	X	X	X	X
253.254	-	-	X	X
000.255	-	-	-	-
000.100	-	-	-	-
000.000	-	-	-	-
\SII.255.255	-	X	-	X
\SII.254.255	-	-	-	-
\SII.254.254	-	-	-	-
\SII.253.254	-	-	-	X
\SII.000.100	-	-	-	-
\SII.000.000	-	-	-	-

\SM 253.255 X X

Owner	000.255			
RWEP	G	C	O	U
Tandem User	**R**	**W**	**E**	**P**
255.255	X	X	X	X
255.254	-	-	-	-
254.255	-	-	-	-
254.254	-	-	-	-
253.255	-	-	-	-
253.254	-	-	-	-
000.255	X	X	X	X
000.100	X	X	-	-
000.000	X	X	-	-
\SII.255.255	-	X	-	X
\SII.254.255	-	-	-	-
\SII.254.254	-	-	-	-
\SII.253.254	-	-	-	-
\SII.000.100	-	X	-	-
\SII.000.000	-	X	-	-

\SII 000.255 X X

Owner	254.254			
RWEP	C	U	G	O
Tandem User	**R**	**W**	**E**	**P**
255.255	X	X	X	X
255.254	-	-	-	-
254.255	X	X	X	X
254.254	X	X	X	X
253.255	-	-	-	-
253.254	-	-	-	-
000.255	-	-	-	-
000.100	-	-	-	-
000.000	-	-	-	-
\SII.255.255	X	X	-	-
\SII.254.255	X	X	-	-
\SII.254.254	X	X	-	-
\SII.253.254	-	-	-	-
\SII.000.100	-	-	-	-
\SII.000.000	-	-	-	-

Owner	000.100			
RWEP	O	G	U	-
Tandem User	**R**	**W**	**E**	**P**
255.255	X	X	X	X
255.254	-	-	-	-
254.255	-	-	-	-
254.254	-	-	-	-
253.255	-	-	-	-
253.254	-	-	-	-
000.255	X	X	X	-
000.100	X	X	X	-
000.000	-	X	-	-
\SII.255.255	-	-	X	-
\SII.254.255	-	-	-	-
\SII.254.254	-	-	-	-
\SII.253.254	-	-	-	-
\SII.000.100	-	-	X	-
\SII.000.000	-	-	-	-

Owner	253.254			
RWEP	G	C	O	-
Tandem User	**R**	**W**	**E**	**P**
255.255	X	X	X	X
255.254	-	-	-	-
254.255	-	-	-	-
254.254	-	-	-	-
253.255	X	X	X	-
253.254	X	X	X	-
000.255	-	-	-	-
000.100	-	-	-	-
000.000	-	-	-	-
\SII.255.255	-	X	-	-
\SII.254.255	-	-	-	-
\SII.254.254	-	-	-	-
\SII.253.254	-	X	-	-
\SII.000.100	-	-	-	-
\SII.000.000	-	-	-	-

ROBERT SCHMIDT

FSTAT - PSTAT EXERCISE

INSTRUCTIONS: Answer the following questions writing down the commands used.

1. FSTAT the left side of your Coyote What are the PID numbers and the disc file names of the processes that have the left side of your coyote open? Do the same thing to the right side of your Coyote.

```
;FSTAT $F1.#LOG        →ECONTROL, CI
;FSTAT $F1.#ROG        "
```

2. PSTAT the econtrol process of your terminal. List the creation ID and the process ID of your ECONTROL process.

```
                       CREATION   PROCESS
;PSTAT $F1OG            254,255    255,255
```

3. Logon into TANDEM's command interpreter on your left side. What are the PID numbers of the processes that have the left side of your terminal open now ?

```
:LOGON SII.CLASS
:FSTAT $F1.#LOG        →ECONTROL, CI, COMINT
```

4. Exit TANDEM's command interpreter and PSTAT the process $DNF1. What file is executed to create this process ?

```
;PSTAT $DNF1            → $DATA.SII.DOWNLD
```

5. FSTAT the file $SYSTEM.SYSDATA.VDTCTRL. What processes have this file open?

```
;FSTAT $SYSTEM.SYSDATA.VDTCTRL    →$DNF 1-6
```

6. FSTAT the file $DATA.EDITOR.MSGFILE. What processes have this file open?

```
;FSTAT $DATA.EDITOR.MSGFILE    →EPIO, EMSG, F—, SEH, Z011
```

7. PSTAT the process called $EMSG. What files does this process have open?

```
;PSTAT $EMSG    →$RECEIVE, Ø, \WP.$EMSG, $SYSTEM.SYSTEM.SYSTEMS, ETC.
```

8. FSTAT the process called $receive. What do you notice about this process?

```
;FSTAT $RECEIVE    →EVERY PROCESS HAS THIS OPEN
```

9. Find out who created the process $CGOD. Is this a NORMAL or NONSTOP process? List the PID number(s) of $CGOD. CREATED BY ZEUS; NONSTOP; 1,57 & 0,120

```
;PSTAT $CGOD
```

10. HOW (exclusion,access modes) does $CGOD have $SYSTEM.SYSDATA.CONFIG open?

ACCESS = R (READ ONLY)
EXCLUSION = S (SHARED)

FUP EXERCISE

NAME : ROBERT SCHMIDT

NOTE: Remember to write down the COMMANDS required to accomplish each step.

1. From SII's command interpreter (;) logon as the tandem user SII.CLASS and run the File Utility Program (FUP). **DO NOT USE TANDEM'S COMINT !**

   ;FUP

2. Obtain a list on your terminal of all files contained in $SYSTEM.STUDENT and in $SYSTEM.EDITOR.

   -FILES $SYSTEM.STUDENT
   -FILES $SYSTEM.EDITOR

3. Duplicate the files $SYSTEM.STUDENT.FRUITS and $SYSTEM.STUDENT.STRTAOPR into a subvolume on $DATA that has the name of your terminal process. For example, if your process is $F512 - your subvolume would be TERMF512. The file names should stay the same.

   -DUP ($SYSTEM.STUDENT.FRUITS, $SYSTEM.STUDENT.STRTAOPR), $DATA.TERMFIO8.*

4. Determine the security of the disc files you duplicated.

   -INFO TERMFIO8.* → 254,254 (CCCC; NNNN) BOTH

5. Secure the disc files you duplicated so that only the owner can purge or write to it, and only those in the local group can read or execute it.

   -VOLUME TERMFIO8
   -SECURE *, 'GOGO'

6. Use the copy command to display the contents of your copy of the disc file FRUITS on your terminal.

   -COPY FRUITS

7. Purge the data in your copy of the disc file FRUITS.

   -PURGEDATA FRUITS

8. Use the copy command to display the contents of your copy of the disc file FRUITS. How is this different from the results of question 6? Why?

   Ø RECS TRANSFERRED → DATA IS PURGED

9. Duplicate another copy of $SYSTEM.STUDENT.FRUITS into your subvolume. Try leaving the file name FRUITS? What happens and why? -DUP $SYSTEM.STUDENT.FRUITS, *

   → ERROR 10, FILE ALREADY EXISTS

10. Rename your current version of FRUITS to OLDFRUIT then duplicate another version into your subvolume with the name FRUITS.

    -RENAME FRUIT, OLDFRUIT
    -DUP $SYSTEM.STUDENT.FRUITS, *

11. Purge your copy of the disc file OLDFRUIT.

    -PURGE OLDFRUIT

12. Duplicate the disc file $SYSTEM.STUDENT.CMON into your subvolume. What happens and why? How could you correct this situation?

;DUP $SYSTEM.STUDENT.CMON, * → ERROR 48 SECURITY VIOLATION
OWNER IS NULL.NULL NOT SII.CLASS

13. Set FUP so that it will be ready to create a file that has the same characteristics as the file $DATA.SYSDATA.DEVTABLE.

-SET LIKE SYSDATA.DEVTABLE

14. Verify this using the SHOW command. -SHOW

15. Set the record length to 100, block size to 512,and the size of the primary extent to 3 and the secondary extents to 1.

-SET REC 100
-SET BLOCK 512
-SET EXT (3,1)

17. Create the file $DATA.<your subvol>.<your initials> .

-CREATE RVS

18. Force this disc file to allocate 10 extents. Now force this disc file to only allocate 2 extents.

-ALLOCATE RVS, 10
-DEALLOCATE RVS
-ALLOCATE RVS, 2

20. Give this file to Tandem User NULL.NULL and secure it '0000'.

-SECURE RVS, '0000'
-GIVE RVS, 000,000 (NOT GIVE THEN SECURE)

21. Get detailed information on each file in your subvolume.

-INFO *, DETAIL

22. Purge the file $DATA.<your subvol>.<your initials> . What happens and why?

-PURGE RVS
→ERROR 48 BECAUSE NULL.NULL IS OWNER

23. What do you have to do to purge this file?

;LOGON NULL.NULL
-PURGE $DATA.TERMF108.RVS .

24. Obtain information on all the files in the subvolume $DATA.EDITOR using the short version of this command. Determine the last time a record was written into each of the following files: -INFO $DATA.EDITOR.*

$DATA.EDITOR.SITEVARS	9/27	$DATA.EDITOR.BASKET	10/16 15:16
$DATA.EDITOR.STYLCODE	10/16 16:52	$DATA.EDITOR.LMSG	10/16 12:14

25. List the full disc file name of an open file in the $DATA.EDITOR subvolume.

\CLAS.$DATA.EDITOR.BASKET ('0' IN 1ST POSITION OF CODE FIELD)

26. List the full disc file name of an empty file in $DATA.EDITOR.

\CLAS.$DATA.EDITOR.*DTINFO Ø EDT

27. What is the full disc file name of the largest file in each of these subvolumes: - INFO EDITOR.* etc.

$SYSTEM.EDITOR	.TEXTF	$SYSTEM.CLASS	.TEXTF
$SYSTEM.SYSTEM	.OPRLOG	$SYSTEM.SII	.APSPAGE
$SYSTEM.SYSDATA	.CONFIG	$SYSTEM.CHARGEN	.CHARS

28. Obtain a list of all subvolumes on the $SYSTEM disc volume. How many subvolumes are there?

-SUBVOLS $SYSTEM => ADVENT, APLFONT etc.
=> 66 SUBVOLS

29. Info the complete $SYSTEM.SYSTEM subvolume. List the full disc file names of 2 files that are licensed. What is the purpose of this license?

-INFO $SYSTEM.SYSTEM.*

\CLAS.$SYSTEM.SYSTEM.PSTAT => FOR SECURITY
.READYQ

30. Info the files in the subvolume $system.system.

List 3 files that are program-type files: CODE 100

TDUMP
TEXTGEN
VUP

List 3 files that are edit-type files: CODE 101

RESET
SCOPE
TAPESET

List 2 files that are structured data files: OTHER CODE, NOT U OR BLANK IN TYPE

INROUTR/Ø
MD

32. Purge all the files in your own subvolume.

;LOGON SII.CLASS
-VOLUME TERMFIOS
-PURGE STRTAOPR

18.5/16

FUP QUIZ

Name Robert Schmidt

1. Write the command line to create a copy of a file (and its contents) called $SYSTEM.STUDENT.TEST1, naming this new file $SYSTEM.STUDENT.TEST2 ?

(ASSUMING YOU ARE THE OWNER OF $SYSTEM.STUDENT.TEST1)

; FUP DUP $SYSTEM.STUDENT.TEST1, $SYSTEM.STUDENT.TEST2

2. $SYSTEM.TEST contains three files called 'ONE', 'TWO' and 'THREE', respectively. Using one command line only, what is the command to transfer all three files into subvolume 'TEST2'?

; FUP RENAME $SYSTEM.TEST.*, $STUDENT.TEST2.*

3. A file called STUDENT.TEST has an owner of CLASS.SUPER. Write the command line to change the ownership of that file to SII.CLASS. Who has the authority to change the ownership of the file?

ok

; FUP GIVE $SYSTEM.STUDENT.TEST, 254,254

=> SUPER.SUPER OK CLASS.SUPER

4. Using the above file, write the command for changing the security to: read = any local user, write = any local group member, execute = local or remote owner , purge = local SUPER.SUPER.

; FUP SECURE $SYSTEM.STUDENT.TEST, 'AGU-'

5. Write the fup command to temporarily change your current volume and subvolume to $SYSTEM.TEST?

-VOLUME $SYSTEM.TEST

6. Write the command to display a listing of the security classifications and owners of all files in $SYSTEM.SYSTEM?

-INFO $SYSTEM.SYSTEM.*

7. Write the command line to display a list of all subvolumes on $SYSTEM?

-SUBVOLS $SYSTEM

8. Write the command line to run the utility that shows the current status of all subsystems textfiles.

; PERCENT

9. Write the command line to display all versions on all volumes of the file ECONTROL.

; FIND ECONTROL

10. Write the command line to display the process revision level of the program file $SYSTEM.SII.SPELL.

; LINKUP INFO $SYSTEM.SII.SPELL

11. Define the RWEP levels, and the owner of this program so the following users on the system have the defined authorities:

Owner 254,255

RWEP N U N U

Tandem User	R	W	E	P
255.255	x	x	x	x
255.254	x	o	x	o
254.255	x	x	x	x
254.254	x	o	x	o
253.255	x	o	x	o
253.254	x	o	x	o
000.000	x	o	x	o
SII.255.255	x	x	x	x
SII.254.255	x	x	x	x

EDIT EXERCISE

Name ROBERT SCHMIDT

PURPOSE: To become familiar with the TANDEM EDITOR commands.

Instructions:
Write down the **COMMANDS** needed to accomplish each step, **NOT** the results.
The terms 'obey file' and 'edit file' mean the same thing.

1. From SII's command interpreter sign on as tandem user sii.class.

   A) Use the text editor to create an obey file and name your obey file $data.student.<yourname>.

   ```
   * GET ROB
   3 Y
   ```

   B) It must contain COMMENT(S) at the beginning to briefly describe the file.

   ```
   *A
   1  COMMENT  THIS IS A COMMENT
   ```

   C) It must contain COMMENT(S) at the end of the file to notify the user when execution is finished.

   ```
   2  COMMENT  THIS IS THE END
   3 //
   ```

   D) Your file must accomplish the following:

   1) Temporarily change your $volume.subvolume defaults to $DATA.STUDENT.

   ```
   * A 1
   1.1  VOLUME $DATA.STUDENT
   ```

   2) Display information on all files in your default volume and subvolume.

   ```
   1.2  FILES
   ```

   3) List all the subvolumes on $DATA to your screen.

   ```
   1.3  FUP SUBVOLS
   ```

   4) Temporarily change your default node name from \CLAS to \WP.

   ```
   1.4  SYSTEM \WP
   ```

   5) Change your default node name back to \CLAS.

   ```
   1.5 SYSTEM
   1.6 //
   ```

2. Execute this obey file from Tandem's Command Interpreter.

   ```
   ; COMINT
   : LOGON SII.CLASS
   : OBEY ROB
   ```

3. Use the EDIT utility to obtain a hardcopy listing of this obey file.

   ```
   ;edit /out $s.#s.slp/
   *g $data.student.<yourname>
   *la
   *exit
   ```

4. Once you have a hardcopy, use the editor to change your obey file as follows:

;EDIT ROB
*LA

A) Temporarily change your default $volume.subvolume to $SYSTEM.EDITOR instead of $DATA.STUDENT.

*F 2
2 R$SYSTEM.EDITOR

B) Verify this change with a WHO command.

*A 2
2.1 WHO

C) Change your second line so that you display information on all files in $DATA.STUDENT.

*F 3
3 R$DATA.STUDENT

D) Delete the line that lists the subvolumes on $DATA.

*D 4

E) Add a COMMENT line telling the user that the new default node is \WP BEFORE the line that will actually do this.

*A 4
4 COMMENT NEW DEFAULT NODE IS \WP

F) Add a WHO command after each time the default node name is changed.

*A 5
5.1 WHO

*A 6
6.1 WHO

G) Renumber this file so that it starts with line number 10 and every line after is incremented by ten.

*NUMBER ALL TO 10 BY 10

5. Execute this obey file in this manner.
;comint / in $data.student.<yourname>/

;COMINT /IN ROB/

6. What steps does this way of execution save compared to step number 2?

NO ;LOGON SII.GLASS

7. Obtain a hardcopy of this edit file as in number 3.

SEE 2.

8. Create a take in editorial with the same commands as the current version of your edit file, (NO LINE NUMBERS !!) and give this take a story name.

;EDIT ROB
#LA
(DEFINE LINES, SPLIT SCREEN, DEL MOVE) → STORY NAME ('ROB EDIT')

9. Omit your COMMENT lines.

10. Obey this story name from SII's command interpreter.
;o story name

;O ROB EDIT

11. Proof this take on the slow line printer (SLP).

Edit Quiz

Name Robert Schmidt

Instructions:

Create an obey file called $data.student.<your last name> containing FUP commands to perform the following FUP operations:

;EDIT SCHMIDT
*A

1) Obtain a list of all SUBVOLUMES on the $DATA volume.

1 SUBVOLS

2) Obtain a list of all FILES in $DATA.STUDENT.

2 FILES

3) Do an info on the $SYSTEM.EDITOR.TAPES.

3 INFO $SYSTEM.EDITOR.TAPES

4) Do an info detail on the program file that runs your econtrol

4 INFO $DATA.SII.ECONTROL, DETAIL

5) SET the file creation parameters so that you are ready to create a file LIKE $SYSTEM.STUDENT.CMON.

5 SET LIKE $SYSTEM.STUDENT.CMON

6) SHOW these creation parameters.

6 SHOW

7) Create this file naming it $DATA.STUDENT.(your middle name).

7 CREATE VERNON (NO JOKES)

8) PURGE this file.

8 PURGE VERNON!

A. EXECUTE THIS FILE LIKE THIS ;FUP / in $data.student.<your last name>/.

OK

B. Obtain a hardcopy of this file using the editor as in the edit exercise. Please hand this hardcopy in as your quiz.

OK

* SET TAPESET ERIN
* SELECT BASKET = 'NATIONAL'
* SELECT BASKET = 'CALIFORNIA'
* SAVE

BACKUP / TAPE QUIZ

11/13

NAME Robert Schmidt

1. List two reasons why you should backup your system.
   1) TO PREPARE FOR POSSIBLE SYSTEM FAILURE
   2) FREE DISK SPACE

2. What command line would you use to obtain a hardcopy listing of all the FILES on a tape WITHOUT restoring any of them ?

```
;RESTORE /OUT $S.#S.LISTING/ $TAPE,, LISTALL
```

3. What command line would you use to backup all the files in the $DATA.OBEY subvolume EXCEPT $DATA.OBEY.STRTWARM ?

-1

```
; BACKUP $TAPE, $DATA.OBEY.*, NOT $DATA.OBEY.STRTWARM
```

4. What command line would you use to start a backup of all files, but starting with $SYSTEM.DATA.ZZDIAG ? Would file $DATA.ALPHA.ZZZDIAG be backed up ?

```
; BACKUP $TAPE, *.*.*, START $SYSTEM.DATA.ZZDIAG
```

⇒ NO

5. You have a tape that already contains STORIES in tapesets. How would you obtain a hardcopy listing of all stories in these tapesets WITHOUT restoring any stories back onto the system ?

-1

```
; TAPE $TAPE
* LIST
```

6. You have a tape that contains tapeset SPORTLOG. What commands would you use to restore the stories in this tapeset into the basket OLDSPORT on the system ? (basket OLDSPORT already exists.)

```
;TAPE $TAPE
*SYSTEM CLASE
*SCAN SPORTLOG        NOT NECESSARY
*SET TAPESET SPORTLOG
*SET BASKET OLDSPORT
*ADD
```

7. What commands would you use to backup all the stories on the editorial system EXCEPT those stories in the CALIFORNIA basket ?

```
;TAPE $TAPE
*SYSTEM CLASE
*SET TAPESET ERIN
*REJECT BASKET = 'CALIFORNIA'
*SAVE
```

```
TEXT EDITOR - T9601C11 - (01DEC83)
CURRENT FILE IS $DATA.STUDENT.SCHMIDT
   1     SUBVOLS
   2     FILES
   3     INFO $SYSTEM.EDITOR.TAPES
   4     INFO $DATA.SII.ECONTROL,DETAIL
   5     SET LIKE $SYSTEM.STUDENT.CMON
   6     SHOW
   7     CREATE VERNON
   8     PURGE VERNON!
   9     EXIT
```

3 - watch ~~using~~ relying on your defaults in edit file

8/8

CI/COMINT EXERCISE

NAME : ROBERT SCHMIDT

1. Who are you logged on as in your sii command interpreter? If you are not logged on as sii.class, do so now!!!! SII.CLASS

2. What is the default subvolume for sii.class? STUDENT

3. What command did you issue to determine default setting in question #2? ;WHO

4. Use the VOLUME command to set your temporary default volume/subvol ID to $DATA.TERMxxxx (xxxx = your terminal process number. EX: TERMF304.) OK
;VOLUME $DATA.TERMF108

5. Check to be sure of your new defaults. OK ;WHO

6. Issue the SYSTEM command to change your default node to \HDWR. OK ;SYSTEM \HDWR

7. Check your current defaults. What has changed? DEFAULT SYSTEM

8. Issue the system command to change your default node back to \CLAS. Verify that it took effect. OK ;SYSTEM

9. Create a file named <your subvol>.<your initials>. OK ;CREATE RVS

10. Verify the file was created and then purge this file. ;FILES
;PURGE RVS

11. What was the 'full' name of the file you created and then purged ? How was this 'full' filename created ? \CLAS.$DATA.TERMF108.RVS

12. Using the status command, determine the number of processes running in cpu 1
OK ;S 1

13. Use the status command to list all processes running file $system.sii.just. OK ;S *,PROG $SYSTEM.SII.JUST

14. Obtain a list of all NAMED processes on the system. Obtain a list of NAMED processes on the Editorial system. (processes whose name begins with $E)
OK ;PPD ;PPD $E*

15. Verify that the process $EPRG is running. OK ;PPD $EPRG

16. Use the status command to list all processes that have the left side of your coyote designated as the home terminal.
;S *,TERM $F1.#LWR OK CI,ECONTROL

17. Run the utility PSTAT on your econtrol process. OK ;PSTAT $F108

18. Alter the priority of your econtrol process to 40. OK ;ALTPRI 0,122, 40
OR ;ALTPRI $F108, 40

19. Run PSTAT to verify the change. CAN'T ALTER PRIORITY ;PSTAT $F108

20. Alter the priority of your SII command interpreter to 40. OK ;ALTPRI 0,137,40

21. Verify this with PSTAT. OK ;PSTAT 0,137

THE REMAINDER OF THIS EXERCISE TO BE DONE IN TANDEMS COMINT

22. Log on as Tandem user CLASS.SUPER. Create a Tandem user in the group CLASS with a user name of <your first name>. Logon as this new Tandem user.

OK :ADDUSER CLASS.ROB, 250,1

23. Issue a Users command to obtain the following information: OK :USERS *
(ALL USERS IN GROUP)

Tandem I.D. # 250,001

Default Volume.Subvolume $SYSTEM.NOSUBVOL

24. Issue a files command; what files are listed? :FILES

Subvolume : NOSUBVOL

File names : NONE

25. Set your permanent default volume ID to $DATA.TERMxxxx (xxxx = terminal process name EX: TERMF408)

OK :DEFAULT $DATA.TERMF108

26. Issue a WHO command. What is your volume and subvolume?

$SYSTEM.NOSUBVOL

27. Why have your default volume and subvolume not changed?

HAVE TO LOG OFF AND ON AGAIN

28. Log on again; then issue a WHO command. Did your default volume and subvolume change? YES!

29. Assign a password to your Tandem user.

:PASSWORD ERIN

30. Get a list of all Tandem users on the system.

:USERS *.*

31. Delete the Tandem user you created.

:LOGON CLASS.SUPER
:DELUSER CLASS.ROB

PUP EXERCISE

NAME : Robert Schmidt

NOTE: Remember to write down the COMMANDS used to accomplish each step.

1. Obtain a listing on your terminal of the device configuration.

) PUP LISTDEV

2. Which devices are currently down?

   25 LHLINK-B -13 (D IN STATE FIELD)

3. Which devices are in hard down state?

   NONE (H IN STATE)

4. What are the logical device numbers of the following devices: = LDEV

   $OSP - 3 ALWAYS
   $TAPE - 6
   $SYSTEM - 4
   $F1 - 28

5. List the primary processor of each of these devices: = PPID

   $OSP - 1
   $TAPE - 0
   $DATA - 1
   $F1 - 0

6. What are the controller and unit numbers of the tape drive, the first FIM, and the line printer ? = PCU

   $TAPE %030
   $F1 %240
   $LP %021

7. Which disc volumes are mirrored?

LDEV	NAME
4	$SYSTEM
5	$DATA

8. Switch the primary processor for the mag tape unit.

   #PRIMARY $TAPE,1

9. Verify that the switch occured.

   #LISTDEV TAPE

10. Switch the preferred path (asterisk path) for any disk configured for a backup controller.

    #PRIMARY $SYSTEM-B
    #PRIMARY $SYSTEM-MB

11. Verify that the switch occured.

    #LISTDEV DISC

12. Obtain a list of the free space available on $SYSTEM. # LISTFREE $SYSTEM

volume name $SYSTEM
Used file pages 105873 System pages X TNS1 ONLY
Free file pages 8151 Fragments 374
Files 1454 Directory Size 2504

13. Obtain a histogram of the freespace on $SYSTEM. What size fragments have the highest percentage? # LISTFREE $SYSTEM, HIST
→ 2-3 PAGES

14. Obtain a list of bad tracks on $SYSTEM.
LISTBAD $SYSTEM-P
M

15. Obtain a list of tracks that have been spared on $SYSTEM.
LISTSPARES $SYSTEM-P
M

16. You have received a new disc pack from the factory. What commands must you issue after installing it on the drive?
REVIVE XXX ($SYSTEM-M, 29)

17. Your system seems to have locked up. The console has a command interpreter prompt but all other terminals fail to function. What is the most important command to issue first. (Realize that this might be the only one you get before the console dies.)? What do you accomplish with this command?
REFRESH → WRITE FILE POINTERS TO DISK

18. Obtain a hardcopy listing of the device configuration.
) PUP /OUT $S.#S.SLP/ LISTDEV

STEPS 19-22 ARE TO BE WRITTEN DOWN ONLY!!!

19. You are going to replace a disc pack on the volume $SYSTEM with a backup pack. Write the command(s) to logically disable the primary unit of the mirrored volume $SYSTEM from access by the operating system.
REMOVE $SYSTEM-P

20. Verify that the unit is down.
LISTDEV (D IN STATE)

21. Restore to the operating system the primary unit of the mirrored volume $SYSTEM. Give this command a name, with the nowait option, a low enough priority so as not to interfere with other processes, and specify 5 tracks at one second intervals.
) PUP / NAME $STRT, NOWAIT, PRI 10 / REVIVE $SYSTEM, 5, 100

22. When the restore process is complete, verify that the primary unit is up.
LISTDEV DISC, DETAIL (* IN STATE FIELD)

16/17

COMINT,FSTAT,PSTAT QUIZ

Name ROBERT SCHMIDT

1. I have a ; prompt on my screen. What is the disc file name of this program?

;S
→ $DATA.SII.CI

2. I have a : prompt on my screen. What is the disc file name of this program?

;SO
→ $SYSTEM.SYSØ6.COMINT

3. My ECONTROL is $F206 and I have a Coyote. My terminal is locked up. What are the command(s) you would execute to find out what processes are running against my terminal?

;S *,TERM $F2.#LØ6
||
R

-1

this won't show everything

Fstat $F2.#LØ6

4. You find that I have 2 FUP's, an ECONTROL, a CI and an FSTAT running against my right side. What command(s) would you execute to unlock it?

;STOP XX,XXX USING PIDS FOR FUPS, FSTAT, AND CI AS DETERMINED ABOVE
||
||
||

5. I think my ECONTROL ($F206) is in debug. What commands would you execute to verify this?

;PSTAT $F206

6. The permanent default volume and subvolume associated with tandem user sii.super are wrong. What commands would you execute to correct this?

;COMINT
:LOGON SII.SUPER,<CTRL>P ABC
:DEFAULT $XXX.XXX

7. What command(s) would you execute to obtain a list of all the named processes on the system.

;PPD

8. What command(s) would you execute to obtain a list of ALL processes running in cpu 1.

; S 1

9. Write the run line to execute the utility FUP at priority 92 in cpu 4 with a process name of TEST.

; FUP /PRI 92, CPU 4, NAME $TEST/

10. Write the run line to get a hardcopy listing from the utility B on the device $s.#s.lp using $term4 as the terminal for debug prompts. Also use the nowait option.

; B /OUT $S.#S.LP, TERM $TERM4, NOWAIT/

11. What command(s) would you execute to obtain a list of all Tandem users.

; COMINT
: LOGON SII.CLASS
: USERS *.*

; COMINT /IN \HDWK.$F4.#L13, OUT \HDWK.$F4.#L13, TERM $OSP, NAME $ERIN, CPU 2,
PRI 190/

10/15

PUP QUIZ

NAME : Robert Schmidt

1. Which paths are currently the primary or preferred paths to $system and what are the controller/unit numbers of these paths?

   SYSTEM-P : CPU 0 → CONTROLLER %10 → PORT 0

   SYSTEM-M : CPU 0 → CONTROLLER %10 → PORT 1

2. What is the maximum number of Coyotes that a physical system can support if it has 4 XIM's ?

   64

3. A PUP Revive does 2 things in order to restore a volume to mirrored status. What are they?

   A. STARTS PARALLEL WRITES

   B. TRACK BY TRACK COPY OF GOOD DISC TO BAD

4.

6	$TAPE	00,008 %30	01,008 %30	4	0	2048
7	$TAPE1	00,009 %31	01,009 %31	4	0	2048

   Using the example above $TAPE is using which controller and what port on that controller ? CONTROLLER %3 , PORT 0

5. Which are the primary and backup process ID's of the first hard copy console listed?

	PPID	BPID
$LP	01,010	00,010

6. What is the amount of memory available on the $SYSTEM disc and what is the model number?

   TYPE 3, SUBTYPE 3 → 240 MB , P/N 4104

7. You get an error on the console '$DNF1 I/O Failed to $F1.#r00 error 66 ' What would you do to remedy this situation ? (DEVICE $F1? OWNED BY OPERATOR)

   ; VUP KILL PROC $F100

8. What command would you use in SII's command interpreter to send the message 'editorial system will be down shortly at noon' to all users logged onto the editorial system? (OR SYSTEM E)

   ; VUP SEND GROUP ON EDITORIAL SYSTEM WILL BE DOWN SHORTLY AT NOON

   (ALL LOGGED ON USERS)

9. What command would you use from TANDEM's command interpreter to stop all classified vcontrol processes ?

   : VUP STOP SYSTEM C.

10. Describe two of the major differences between VUP send messages and those that are sent with the editorial message process ($EMSG)

    1) SENT TO SPECIFIC VDT, NOT TO SPECIFIC USER

    2) CAN'T BE DISABLED BY OMD.M

18.5/24 Tipstick??

COLDSTART QUIZ

Name Robert Schmidt

1. What is the purpose of a **STARTUP MESSAGE** and how many may be defined for any one program ? TO PASS COMMANDS OR COMMAND STRINGS TO PROGRAM BEING RUN. ONLY (1) MAY BE DEFINED.

2. When scheduling a program for automatic execution is it possible to specify days of the week and dates of the month together ?

   NO

3. . If there has not been a PERIOD defined for a scheduled program what must be specified ?

   RUN TIME (S)

4. Process $F113 is locked up . What request can I give this process to 'wake' it up ?

   ; REQUEST $F113
   ? -20

5. What command must you execute first at the OSP after loading the operating system into one cpu?

   ; SETTIME dd mmm yyyy, hh:mm

6. Show the bit contents that you would use on the processer operator panel when specifying the disc and subvolume number if $system has a PCU of %110 and the subvolume containing the operating system image is SYS25 . PORT # = ACTUAL DISK DRIVE #

(0=off,1=on)	0	0	1	0	1	0	1	0	0	1	0	0	1	0	0	0
SWITCH NUMBER	0	1	2	3	4	5	6	7	8	9	1 0	1 1	1 2	1 3	1 4	1 5

7. What command would you use to change the PCU field for $0 in a PUP LISTDEV to %17 ?

   -1 1/2 ; PUP CONSOLE $17 #15
   (DEVICE WHICH HAS CONTROLLER %17) close (%17 = DECIMAL 15)

8. Who would restart the following processes after they are stopped ?

PROCESS	WHO RESTARTS IT ?
$EAJ1	$EGOD
$AOPR	HUMAN OPERATOR (WITH OBEY FILE OR RUN LINE)
$F111	$ZEUS

9. Describe what console message you would disable with the command PUP CONSOLE , DISABLE 10 ?

"CONTROLLER KILLED" MESSAGE WILL NOT BE LOGGED BY SYSTEM CONSOLE

10. What would you have to do if you wanted console messages 40 through 52 to be broadcast to the group MAINT ?

1) CMD X) LIST AOPR GROUPS
2) COPY RECORDS (CMD.F) FOR MESSAGES 40-52, CHANGING GROUP TO MAINT
3) CREATE RECORDS IN GROUPS LIST FOR USERS TO BELONG TO MAINT GROUP

good answer

11. What would you have to do if you wanted to put user JOHN into the above group ?

CMD.F ON RECORD IN GROUPS LIST, CHANGE USER TO JOHN AND GROUP TO MAINT

12. What's going on in these AOPR log messages ?
(who complained, about who, and what was the complaint ?)

24JUL84 12:56 003,02,025 $EMSG; OPEN failed for \DP.$EMSG error 250

$EMSG COMPLAINED ABOUT \DP.$EMSG — ALL PATHS TO SYSTEM DOWN SO MESSAGE CAN'T BE SENT TO SYSTEM FROM \DP SYSTEM

WRONG ORDER

24JUL84 13:43 003,01,025 $ZEUS; Descendant stopped $F101

$ZEUS COMPLAINED ABOUT $F101 — $F101 HAS BEEN STOPPED BY SOME MEANS

25JUL84 13:32 003,00,037 $RPRTS; OPEN failed for $DATA.SII.CONFIG error 11

$ZEUS COMPLAINED ABOUT $RPRTS — NO RECORD FOUND FOR $RPRTS IN CONFIG FILE OF $DATA.SII

("NO DATA.SII.CONFIG" FOUND)

SCAN EXERCISE

NAME Robert Schmidt

INSTRUCTIONS: Write down the **COMMANDS** used to perform the followingoperations.

1) Create a 'proof keys' record that will send jobs to the spooler as #JOB.YOURNAME. Then, change your user profile to use the proof key that you created. CMD.F ON PROOF KEY RECORD

2) Proof a wire take, go into SCAN, and write down the job number of that proof.
; SCAN
-J ⇒ #9

3) Select your job, and look at this list of jobs again. What change has been made to the list of jobs.
-J9 ⇒ J BY JOB NAME

4) Change the priority of your job.
- PRI 7

5) Select a job list that will only show your job in the spooler.
- ONLY #S.ERIN OR SEL REPORT ROB

6) Put a hold on your job so that when it is printed, it will remain in the spooler with a hold status.
- AFTER ON

7) Change the number of copies this job will print.
- C 5

8) Print a copy of your job on the okidata printer.
- LOC #S.OKI

9) Select a job list that will show all of the jobs in the spooler.
-ALL , -SEL OWNER *

10) Take the hold off of your job.
= AFTER OFF
= HOLD OFF

11) What is the purpose of the wait command in SCAN?
RELIST JOBS WHEN STATE OF JOB HAS CHANGED

12) Get out of SCAN, and change your proof keys record location to $S.#YOUR.INIT.
CMD F ON PROOF KEY RECORD ⇒ DEVICE NAME =$S.#S.RVS

13) Call up a wire take and proof it into the spooler.
OK

14) Get into scan, produce a job list to show only your job, and change the location of your job to #CLASS.EXER.
-ONLY #S.RVS
-J28
-LOC #CLASS.EXER

15) Delete the job in the spooler.
-D

16) Get out of SCAN and proof another take into the spooler, and go back into SCAN and produce a list of only your job.

-ONLY #S.RVS
-J

17) Produce another list that displays the form field of jobs in the spooler.

-JFORM

18) Change the form field of your job to wide.

-J36
-FORM WIDE

19) Change the location of your job in the spooler to #S.OKI. Why doesn't your job print on the okidata printer?

-LOC #S.OKI

FORM FIELD OF DEVICE RECORD (#S.OKI) DOESN'T MATCH FORM OF JOB REQUEST SO JOB WON'T OUTPUT.

13.5/16

SCAN, SPOOLCOM QUIZ

Name Robert Schmidt

1. What is the name of the logical device where a 'job' first resides in this spooling system and what type of spooler device is it?

   $S = COLLECTOR

2. What is the name of the process that manages the spooling system and what is the disc file name of the code executed to create this process?

   $SPLS, $SYSTEM.SYSTEM.SPOOL

3. What is the name of the utility to interactively add or delete devices in Tandem's spooling system.

   ;SPOOLCOM
   >DEV

4. What is the name of the utility used to manage jobs once they are entered in the spooling system?

   ;SPOOLCOM or ;SCAN
   >JOB

5. Before you can change the location, copies or priority of a job what must be done? SELECT THE JOB eg. -J n

6. What 2 or 3 commands must be executed to delete a large group of jobs from the spooler?

   -SELECT XXX (eg REPORT ERIN)
   LOC #S.OK1

   -D

   -1 -gd

7. What utility and what command is used to check the percentage of disc space currently used in a given collector?

   ;SPOOLCOM
   >COLLECT $S, STATUS DETAIL

8. What 3 commands must be used to turn the spooler header 'off' on a given device?

   ;SPOOLCOM
   >DEV $XX, DRAIN
   >DEV $XX, HEADER OFF
   >DEV $XX, START

9. What does this error indicate and how would you correct it?

   '22MAR83 08:00 003,00,032 $EDTA; Can't open spooler $S: error 45'

   file is full - it has max # of jobs & get a different error message

   NO - SPL DATA IS FULL

   -1½ SPOOLER CONTAINS MAX. # OF JOBS ALLOWED. WOULD DRAIN SPOOLER, THEN RUN OBEY.SPLCOLD AFTER CHANGING PARAMETER CONTROLLING # OF JOBS ALLOWED.

10. What is the difference between coldstarting and warmstarting the spooling system?

    WARM STATE INDICATES RESTARTING A SPOOLER THAT WAS FORMERLY ACTIVE, WHILE COLD STATE INDICATES STARTING A NEW SPOOLER. SO COLDSTART PURGES ALL SPOOLER FILES AND RECREATES THEM, WHILE WARM START JUST STOPS AND RESTARTS $SPLS (SPOOLING SUPERVISOR).

SYSTEM MANAGER'S UTILITIES

Name Robert Schmidt

Match the utility to its proper definition or its best description.

O	1. FIND	A. Utility that generates statistics on the logical sub-systems' (i.e. editorial,classified, etc.) textfile capacity.
K	2. DISKINFO	B. Utility providing current user statistics.
M	3. FSTAT	C. Used to create files of system commands.
G	4. MAINT	D. Utility for checking network status.
A	5. PERCENT	E. Displays a list of programs currently waiting for CPU resources.
I	6. LINKUP INFO	F. Allows off-line storage/retrieval of stories.
J	7. PUP REFRESH	G. Utility for resorting baskets and desks and maintaining blind box and tear sheet files.
B	8. BUSY	H. Utility for passing parameters to application software.
D	9. NETMON	I. Output is file revision level.
P	10. PUP	J. Write current end of file pointers from cpu to disc.
Q	11. PSTAT	K. Output is total bytes and files contained in a given Subvolume.
E	12. READYQ	L. Utility useful for securing disc files.
F	13. TAPE	M. Used to list processes that have a given disc file open.
C	14. EDIT	O. Used to search disc for given filename.
L	15. FUP	P. Utility useful for balancing I/O to physical devices.
		Q. Used to list files that a given process has open.

INSTRUCTIONS: Some questions require that you execute a utility or process.
ENTER THE COMMAND LINE on this form that you used for these questions.

1) What does Tandem use the backslash character to denote? (1)
A network node name. (Some other system on the NET)

2) What command(s) would list the systems currently available on the net? (1)
NETMON probe

3) What command(s) would find the PID(s) of $CMON? (1)
PPD $CMON or PSTAT $CMON
This tells us the primary PID and the backup PID. Process created by $Z000.

4) Using the LINKUP utility, find and write down the build date and revision level for $SYSTEM.SII.SUPER. (1)
LINKUP INFO $SYSTEM.SII.SUPER.

5) Who has the authority to create Tandem users? (2)
The group manager can create users in his group;
SUPER.SUPER can create any user.

6) Who has the authority to stop a process? (2)
The creator of the process,
local super.super,
local group.super (of either process id or creation id),
same local process id, same local creation id

7) What command(s) would produce a list of all TANDEM user accounts in your group on the line printer. (4)
;comint
:logon sii.class
:users/out $s.#s.lp/ *

8) What EDIT command(s) would produce a hardcopy listing of the edit file $SYSTEM.STUDENT.STRTAOPR on the slow line printer (SLP)? (3)
;edit /out $s.#s.slp/ $SYSTEM.STUDENT.STRTAOPR
*la
OR ;edit $SYSTEM.STUDENT.STRTAOPR
*1 out $s.#s.slp a

9) Someone has exited the command interpreter on the OSP. ($Z000 has been killed) You have another terminal available to you. Write the run line to start a TANDEM command interpreter running on $OSP. (3)

:comint/in $OSP, out $OSP, term $OSP, name $Z000, pri 199, nowait, cpu 0/1

10) What does the VOLUME command do? Why would you use it? (2)

It temporarily sets your default volume and subvolume.
This saves keystrokes if you are doing a lot of file naming.

11) The Tandem users below have the following access to these 2 files:

Tandem User	Owner 254.254 RWEP CAGU				Owner 000.000 RWEP NOC-			
	R	W	E	P	R	W	E	P
255.255	x	x	x	x	x	x	x	x
255.254		x			x			
254.255	x	x	x	x	x			
254.254	x	x	x	x	x			
254.100	x	x	x		x			
000.255		x			x	x	x	
000.100		x			x		x	
000.000		x			x	x	x	
\SII.255.255	x			x	x		x	
\SII.254.255	x			x	x			
\SII.254.100	x				x			
\SII.000.255					x		x	
\SII.000.100					x		x	

Determine the owner and the RWEP security values of the 2 files above. (4)

12) The following questions pertain to the file $SYSTEM.MANAGER.FINAL .

a) Which TANDEM user owns this file?(1)
SUPER.SUPER (-1 or 255,255)
b) What are the RWEP (read/write/execute/purge) levels?(1)
GUO-
c) Which TANDEM users can duplicate this file?(1)
ANYONE IN THE SUPER GROUP
d) Which TANDEM users can rename this file?(1)
ONLY LOCAL SUPER.SUPER

13) What command(s) will find the security levels of $SYSTEM.SYSTEM.TCOPY ?(1)

fup info $system.system.tcopy

Who is the owner of this file?(1)
SUPER.SUPER (-1)

14) A file has an owner of 250.002. Write the command line to show how you could change ownership of that file to user SII.SUPER?(2)

fup give $<volume>.<subvol>.<filename>,254,255

15) What command would you use to list the processes that have the spooling supervisor open ?(1)
;FSTAT $SPLS

16) Under what circumstances would you want to issue a PUP REVIVE command?(1)
To return a disk drive to a mirrored volume status.

17) List the PUP commands you would issue to down a disk controller to remove it from the system.(3)

A) PUP primary all paths away from the controller to be removed.
B) Exercise the paths to ensure that they work.
C) PUP down ! all of the paths to the controller.

18) Job number 5 is in the spooler at location #job.test. You want 3 copies of this job on the okidata (OKI) and want it to remain in the spooler after printing your 3 copies. What commands would you use to accomplish this?(4)

;SCAN
-j5 (selects job)
-c 3 (asks for 3 copies)
-after on (asks for hold after printing)
-loc #s.oki (specifies okidata printer for output)

19) If the device $LP is offline to the spooler what command in SPOOLCOM would be used to return the line printer to service?(2)

)DEV $LP, START

20) The VUP utility process is used for what purposes?(4)

To stop, kill, start, or send messages to vdt control processes (Econtrol or Ccontrol). This can be done by system, process, cpu, or processes accessing a specific file.

21) VUP groups are: defined in what data file?, accessed by what list name? (4)

Data file $system.sysdata.vstop, accessed by the list 'vdt stop'.
(You would find this information in the list of lists)

22) If the process VUP is to be executed from TANDEM'S COMMAND INTERPRETER the command line format must be:(2)

:VUP /in $SYSTEM.SYSDATA.CONFIG / param

23) List the steps required to logically close down the editorial and classified systems, leave only $Z000 running.(4)

A) VUP send a message to users
B) VUP Stop the VDT's
C) Request $zeus
? i2,\node (will bring all god processes to a halt)
D) Drain the spooler (spoolcom---spooler,drain)
E) Obey STOPALL (to stop all of the remaining processes except $Z000)
F) Pup refresh

24) Since error messages are already sent to a log file, what are the two major benefits of the AOPR program?(2)
A) To broadcast TANDEM error messages to terminals
B) To log SII error messages to a disk file (aoprlog)

25) SCHEDSET has two basic purposes, what are they? (2)

A) To give users access to utilities (menu) who do not have command interpreter authority.
B) To schedule programs for execution.

26) When defining a program in SCHEDSET, under what circumstances must you have an input file and an output file? (1)

To schedule a program for execution.

27) If a PUP REFRESH is scheduled in SCHEDSET, is the PUP utility being run interactively? (1)

NO

28) When accessing the VUP utility in SCHEDSET, what must be specified as the input file? (2)

The CONFIG file ($SYSTEM.SYSDATA.CONFIG)

29) If story #1833 gets lost from the system and I need to recover the contents of that take, I can restore from a tape created by what utility ? (1)
TAPE utility

30) Explain the differences between the SELECT and PATH commands of the TAPE utility. (2)
PATH uses alternate keys (faster) but will only work on 7 paths. SELECT can be used on ANY header field BUT is MUCH slower (reads every record in file)

31) What commands would you use to save onto tape all stories on the editorial system that are in the SPORTS basket EXCEPT those authored by KYLE ? (2)

```
;TAPE $TAPE
*SYSTEM CLASE
*SET TAPESET NOSPORTS
*PATH BA SPORTS
*REJECT AUTHOR = 'KYLE'
*SAVE
```

32. Story JUNK presently resides on the system in the SPORTS basket. I want a copy of this story also to reside in the CALIFORNIA basket. How would you accomplish this USING THE TAPE UTILITY (5)?

```
;TAPE $TAPE
*SYSTEM CLASE                  *RSCAN TEMP
*SET TAPESET TEMP              *SET BASKET CALIFORNIA
*PATH SN 'JUNK'                *ADD
*SAVE
```

33) Write the command line to backup $SYSTEM.MAINT.TESTER and all the files in $SYSTEM.TEST (except $SYSTEM.TEST.FOUR and $SYSTEM.TEST.FIVE). (3)

```
;BACKUP $TAPE, ($SYSTEM.MAINT.TESTER, $SYSTEM.TEST.*),
        NOT ($SYSTEM.TEST.FOUR, $SYSTEM.TEST.FIVE)
```

34) A tape contains several files in the $system.obey subvolume that need to be restored back onto the system into subvolume $data.nobey. What is the complete command line required for this task ? (3)

;RESTORE $TAPE, $SYSTEM.OBEY.*,VOL $DATA.NOBEY

35) You are concerned that the textfile is getting full. What TWO commands might you use to check on this?(2)
A) Use the fup command 'info' with 'stat' option to determine the number of extents allocated and the number of free records available.
EX: ;FUP INFO $DATA.EDITOR.TEXTF, STAT
B) Use command 'percent' to determine percentage used so far.

36) List the commands needed to send a 'wakeup' to Econtrol process $F502.(1)

REQUEST $F502
-20

37) A programmer says that his terminal (terminal 12 on $F2) is giving him strange prompts while he is in EDIT. What could be the possible causes and what command(s) would be used to find out the problem?(3)

MULTIPLE PROCESSES -- fup,pup,comint running at the same time against his terminal $F2.#t12
FSTAT $F2.#t12 (will show what processes are running against his terminal)
STOP THOSE PROCESSES as needed.

38) What is the best way to keep a process listed in the config file from executing or being restarted by its ancestor?(4)

Go into the config file (command x, config, path 'pn'); Call up the record of the process (command f or 'Edit Form'); change the proc number to 0. Then stop the process.

39) Write down the run line that you would use to get a hardcopy listing of this system's device configuration.(2)

;PUP / out $s.#s.lp/ listdev

40) What commands in which utility will list the programs that are currently scheduled
to be run automatically?(2)
;SCHEDSET
/ list schedule OR / l s

41) How would you find the number of disk fragments (on $system) which are between 2000 and 3000 pages in size ?(2)
;PUP listfree $system,hist,2000,3000

42) A terminal's screen is blank; it has no video at all. List two possible causes.(2)
1. Contrast, Brightness turned down. 2. No AC power to Coyote
3. Hardware problem with Coyote (tube burned out, video boards bad or removed).

43) A terminal will not download. 'FIMLOAD0 000' appears at the top of the screen, but nothing else is happening. List three possible causes AND their solutions.(3)

1. Data Cable unplugged at back of Coyote or at FIM patch panel.
2. Data Cable plugged into typer port of Coyote.
3. FIM downed by operator in PUP.
4. Download process not running.
5. First file in VDT CONTROL (Coyote OS) purged or renamed.
6. Coyote OS record deleted from VDT CONTROL file.

44) Describe why the following messages occurred in the AOPR log.(2)

$ZEUS; Descendant stopped $F108
$ZEUS; Descendant stopped $F108
$ZEUS; Failed to run process $F108

Most likely cause is that someone stopped the process $f108 twice in 1 minute. Therefore $ZEUS will not run it until requested.

45) List the two ways in which edit files can be executed.(4)

A. From TANDEM's Comint
:obey < obey file name > OR :o < obey file name >
B. From SII's CI
;comint / in < obey file name > /

46) What commands must be used to alter the characteristics of the line printer ($lp) so that: a narrow form field on a job in SCAN will print on $LP; if the print process is unable to write to a device it will wait 10 seconds before trying again; WRAP mode is on.(5)

```
;Spoolcom
)dev $lp, drain
)dev $lp, form narrow
)dev $lp, trunc off
)dev $lp, retry 10
)dev $lp, start
```

47. What is the utility used when coldstarting to delete temporary files that have been accumulating on the system since the last time you coldstarted? (1)

:sii.deltemps

48. What are the two main uses of the PUP CONSOLE command ?(2)

* control which device will get OPR messages
* control logging (switch log files, start/stop disc logging of messages, enable,disable message listing on console device)

49. In the SCHEDSET utility in what case do you utilize a TANDEM user and password ?(1)

When scheduling a program for automatic execution.

50. Is it possible to use files from another system in SCHEDSET ?(1)

NO

51. Why is it important to have VCONTROL wait when running a program NON-INTERACTIVELY through SCHEDSET ?(2)

    Otherwise output will appear on screen then exit immediately, giving you no time to examine the output.

52. List the network components needed for \CLAS to be able to send a message to a user on \HDWR.(4)

    1. must be physically connected thru modems and line handlers
    2. Guardian must know the NEXTSYS number of \HDWR (in CUP)
    3. Remotepasswords must be set up for SII.SUPER user (for $EMSG)
    4. Must have a System description record set up for \HDWR.

53. List the complete command sequence needed to set up remotepasswords between \CLAS and \HDWR for the NULL.NULL user.(4)

```
AT \CLAS: :logon null.null                AT \HDWR: :logon null.null
          :remotepassword \CLAS,DOG                 :remotepassword \HDWR,CAT
          :remotepassword \HDWR,CAT                 :remotepassword?d \CLAS,DOG
```

54. A COYOTE QB has the following dip switch settings: 12345678 00001011 (0=off,1=on)

    a. What type of keyboard should be connected to this COYOTE ?(1)

    std/n-type/classified

    b. What files will the \CLAS process $DNF1 download to this COYOTE ?(3)

    $DATA.M68.FCTQB
    $SYSTEM.COYOTE.CLASSDEF
    $SYSTEM.COYOTE.STATIND
    $SYSTEM.COYOTE.FUNCTION
    $SYSTEM.COYOTE.CLASSMAT
    $SYSTEM.COYOTE.STATMSG

55. What is the full disc file name of the file that download processes use to determine which files are to be downloaded to a COYOTE ?(2)

    \CLAS.SYSTEM.SYSDATA.VDTCTRL

56. Explain the difference between turning the power off and on to download and using the RESET button to download.(2)

    AC switch: All files are lost, all files are downloaded

    RESET button: First attempts to upload to the file specified in the type E record of the vdtctrl file (EOF must be 0). All files are then downloaded EXCEPT for the character matix files (type M)

57. What is a type V record in the VDT CONTROL file used for ? (1)

Specifies what device a download process will use to download.

58. As the -1 user, what commands would you use so that regardless of what tandem user ran FUP, the process ID of this FUP process would be 000.000 ? (2)

-secure $system.system.fup,'NCNC',progid
-give $system.system.fup,000,000

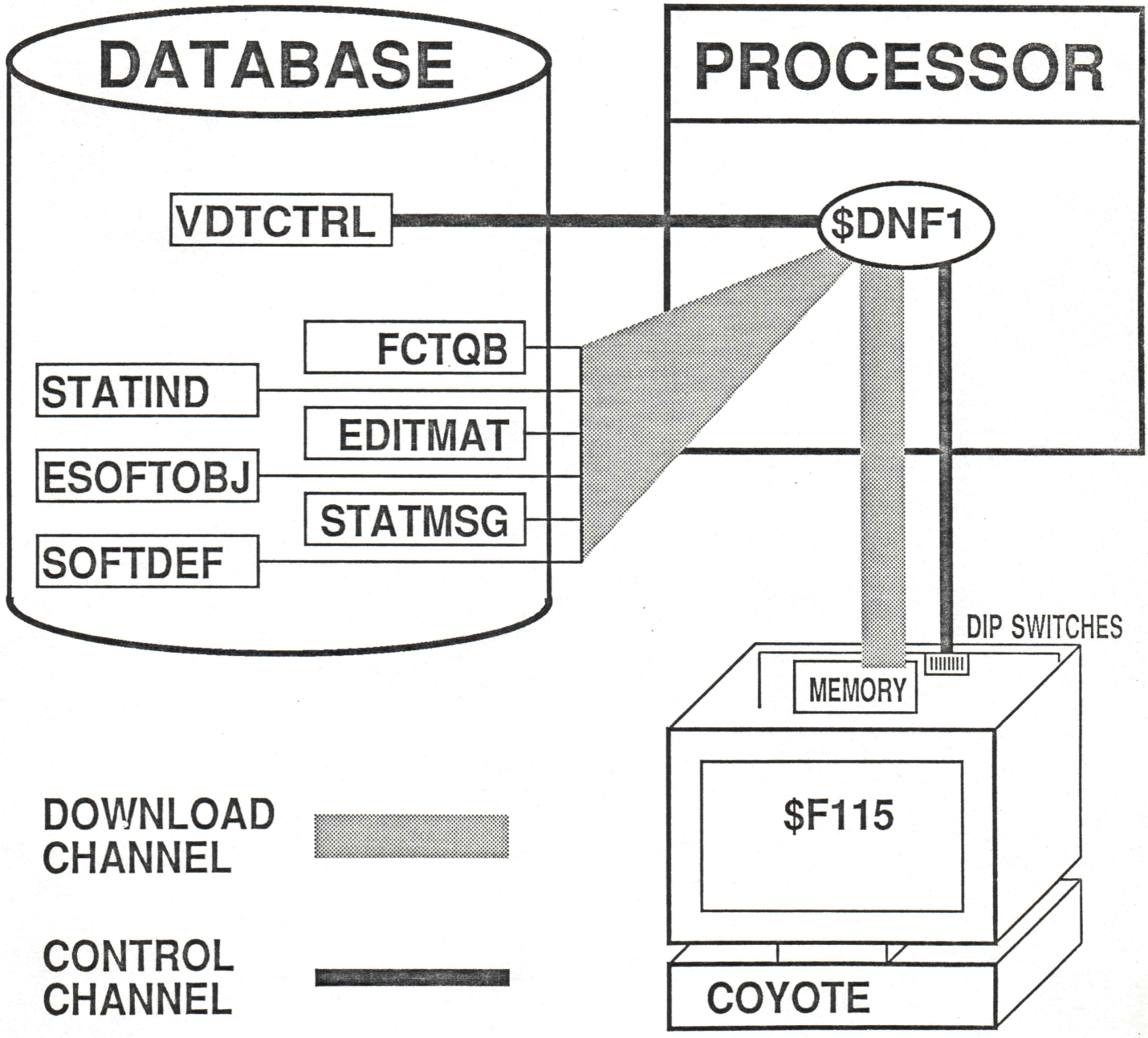
59. What would be the result of the copy command below? Explain your answer (3)

The result is a ERROR 48 Security violation. File \wp.$system.obey.coydata is owned by 254,255 and secured 'GOO-'. To copy the contents of a file you must pass the 'R' level of security. This R level has a security value of 'G' (LOCAL GROUP). You are in the same group, BUT you are not a local process on \wp (you are a remote \CLAS process).

```
;who
VDT name: $F5.#L11
VDT Process: $F511, CI process: \CLAS.01,146
Default volume: $SYSTEM.SYSTEM
SII user: STU1, Tandem user: SII.CLASS (254,254)
;FUP
GUARDIAN FILE UTILITY PROGRAM - T9074A20 - (23JUL84)  SYSTEM  \CLAS
-SYSTEM \wp
-info $system.obey.coydata
                CODE       EOF  MODIF  OWNER  RWEP TYPE  REC BLOCK
\WP.$SYSTEM.OBEY
   COYDATA       101      2696 MAR 21 254,255 GOO-

-copy $system.obey.coydata,,a,share,count 10,first 10
```

The DOWNLOAD Process



COYOTE OS DOWNLOADED 1ST- THEN IT DOWNLOADS OTHERS:
CHARGEN, KEYBOARD, FUNC. FILES, STATUS FILES

DIP SWITCHES, VDTCTRL FILE SPECIFY WHICH FILES TO BE DOWNLOADED